IN THE

Supreme Court of the United States

OCTOBER TERM, 1911.

STATE RAILROAD RATE CASES.

GEORGE T. SIMPSON ET AL.,
Appellants,
v.
DAVID C. SHEPARD ET AL.,
Respondents.
} No. 599.

AND ALSO THE OTHER STATE RAILROAD RATE CASES NUMBERED 600 AND 601.

The Federal Government, having as *Amicus Curiae,* filed in these cases its brief in the Houston E. & W. T. Ry. Co., Houston & Shreveport Ry. Co. v. U. S., now pending in the Commerce Court, it seems necessary for these appellants to present a short statement in reply.

The brief thus filed was prepared for use in the other case and its application in these cases is not apparent.

It can hardly be claimed that the conclusions of the Commerce Commission are authority for affirmance upon the branch of these cases relating to the claim of interference with interstate commerce, as a majority if indeed not all of the members of the Commission refused to take the extreme view of that question expressed by Judge Sanborn in the rate cases.

It remains only to point out some of the most marked differences between the cases.

While the report of Commission contains many references to discrimination and the relative domains of Federal and State jurisdiction, the main opinion in support of the conclusion reached contains *inter alia* the following (page 39):

> "* * * We have no power to require an interstate carrier to put into effect from an interstate point a State-made schedule of rates; our power is limited to condemning unreasonable rates and fixing maximum rates that are in our judgment just and reasonable. Therefore we may not say that because a carrier has in effect State-made rates upon State traffic such rates should be established by it upon interstate business, for, to put the matter bluntly, the rates fixed by a State Commission are not prescribed as a standard by the act of Congress governing interstate rates of transportation. The Texas rates, as such, therefore, we may not prescribe. If, however, they stand the test of reasonableness they may be adopted."

At page 45:

> "* * * When the State of Louisiana after years of endurance makes complaint to this body, these carriers make no showing of the reasonableness of their rates, other than that heretofore dealt with—a traffic adjustment equalizing gateways—and even in this defense all the carriers do not join. The class rates of the Texas Commission within the distances here involved are not too low. This the carriers themselves do not urge. * * *"

The main issue in the Shreveport case is, may the Federal Government require the lowering of an interstate rate to meet a lower but reasonable intrastate rate prescribed by State authority and acquiesced in by the carrier? In the Minnesota cases there is challenged the right of a State to establish a system of intra-state rates presumptively reasonable in themselves and having no reference to interstate commerce.

Other contrasts between the cases may be noted as follows:

The one was commenced by a State to protect the rights of its citizens; the other by stockholders to protect dividends.

One was instituted to prevent intentional and actual interference with the business of citizens of Louisiana by the hostile action of Texas; the other, to establish that a State system of rates for intrastate business much higher per ton mile, upon the average, than interstate rates upon the same road is an unlawful interference with such interstate rates.

See pp. 217, 223, Vol. 1, Case No. 600.

The Shreveport case was brought to obtain reductions in individual high rates; the Minnesota cases, to invalidate the State regulation of railroad rates to the end that railway revenues might be thereby increased.

The former case attempted to put an end to the neutralization of the natural advantages of Shreveport by excessive outgoing rates; the latter to destroy the State's right to regulate its internal commerce.

In the former case the claim of discrimination was made by the injured party; in the latter it is advanced by the carriers who will not be heard to make the claim.

I. C. C. v. L. & N. Ry. Co., 190 U. S., 284.

Commissioner Prouty, concurring in the conclusions reached, did not find it inconsistent to say (page 50):

> " * * * The State may, I think, establish the rate of transportation from point to point within its limits, although the effect of this is to indirectly require a change in interstate rates upon which Congress has not acted."

Respectfully,

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Supreme Court of the United States.

OCTOBER TERM, 1911.

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GEORGE T. SIMPSON, ET AL., *Appellants*,

vs.

DAVID C. SHEPARD.

No. 291.

GEORGE T. SIMPSON, ET AL., *Appellants*,

vs.

EMMA B. KENNEDY, ROBERT ELIOT TOD, ROBERT W. DE FOREST, and WILLIAM STEWART TOD, Executrix and Executors of the Will of John S. Kennedy, deceased, and HENRY A. JAMES.

No. 292.

A SHORT REVIEW OF THE FACTS AND EVIDENCE UPON THE SUBJECTS OF THE PROPERTY RIGHTS OF THE RAILROADS AND THEIR IMPAIRMENT BY THE STATE'S ACTION.

HAVING ESPECIAL REFERRENCE TO NORTHERN PACIFIC AND GREAT NORTHERN RAILROADS.

Filed in behalf of the Northern Pacific Railway Company, and the Great Northern Railway Company, Defendants in the Court below, Respondents here,

W. P. CLOUGH.

C. G. BURGOYNE, 72 to 76 Spring Street, New York.

Supreme Court of the United States

OCTOBER TERM, 1911.

GEORGE T. SIMPSON, ET AL., Appellants, vs. DAVID C. SHEPARD.	No. 599.
GEORGE T. SIMPSON, ET AL., Appellants, vs. EMMA B. KENNEDY, ROBERT ELIOT TOD, ROBERT W. DEFOREST, and WILLIAM STEWART TOD, Executrix and Executors of the Will of John S. Kennedy, deceased, and HENRY A. JAMES.	No. 600.

A SHORT REVIEW OF THE FACTS AND EVIDENCE, UPON THE SUBJECTS OF THE PROPERTY RIGHTS OF THE RAILROADS, AND THEIR IMPAIRMENT BY THE STATE'S ACTION.

HAVING ESPECIAL REFERENCE TO NORTHERN PACIFIC AND GREAT NORTHERN RAILROADS.

The complainants claimed, the Master found, and the Circuit Court decreed, that if enforced, the acts of legislature, and orders of the State Railway Commission, would deprive the companies of their property without due process of law.

Transportation by railway requires the use of the railway

and equipment, the expenditure of fuel and supplies, and the performance of personal services. All these elements are provided at the carrier's cost.

It is matter of common knowledge, that in other kinds of industrial business, profits on about every class of outlay, are expected. A manufacturer or a builder would not think himself adequately rewarded, merely by a gain, at a small rate per cent., upon the value of his factory or his shop. His output must yield him a profit on the aggregate of his expenditures for material and labor, as well.

Usage has made it different for the railroad. Why such a usage should have grown up, is not apparent now. Nevertheless, it exists; so that, in considering what would be a fair profit for the rail carrier, custom now excludes an element that, for other forms of industry it is regarded legitimate to include.

For all outlays for personal service rendered in its business, the railroad has to be content with merely getting its money back. Upon its pay rolls, it is not allowed to make a cent of profit. This is also very nearly true for the other element of maintenance and operation, viz; materials, fuel, and supplies expended.

The right of a rail carrier to make a profit on this latter large element of its necessary outlays is not conceded by the public or the courts, but the Master, and the Circuit Court, in these cases, have allowed the companies to add to the valuations of their physical properties, entitled to earn the rate of income found reasonable, a sum intended to represent the value of the average stock of such things which the road practices keeping on hand, in order to have a supply as needed.

Long habit of doing business in this way has had the effect of practically limiting railway profits to a moderate percentage of an amount taken to represent the investment in the railway and equipment, and in the other physical property required for the business.

The railways themselves have unresistingly settled down

into this position of inferiority to other kinds of industry; which helps to account for the fact, easily ascertainable from the periodical reports of the business concerns of the country, that the average rate of profits to the railroads, from their business, is below that in most other kinds of business.

In favor of adding to the values forming the conventional basis on which allowable profits to the road are computed, other values of an intangible nature, cogent arguments have been advanced. The most important of these intangible values are established good will, and readiness to serve the public.

Whether or not these proposed additions be conceded, it is everywhere admitted that a railroad should at least be allowed to earn enough to pay its taxes, to repay its reasonable operating outlays, to maintain its physical instrumentalities used in the business, and, taking bad years with the good, to have left what would be a fair compensation for the use of such instrumentalities.

The state concedes this.

The real contentions here mostly relate to methods of applying the rule. These contentions group themselves under two general heads:

1. What amount, annually, have the companies the right, free from state interference, to collect for the use of the facilities employed in carrying the traffic covered by the laws and orders in question?

2. Would the receipts permitted by such laws and orders, suffice to produce such amount?

Preliminarily, attention is asked to the thoroughness and care used in the preparation of these cases, and in their consideration, first by the Master and afterwards by the Circuit Court.

In this connection, the qualifications of the Master for the work are fit to be considered. A lawyer of many years'

active practice in important matters, for a long period he served as a judge of the district court of the State of Minnesota, at St. Paul.

In the ten printed volumes of oral evidence and the four supplementary volumes of exhibits, in the cases involving Northern Pacific and Great Northern, it is confidently believed that every fact capable of throwing light on the points involved in the controversy appears.

The time and study spent, first by the Master, and afterward by the Circuit Court, in considering the proofs, and the pertinent legal questions, have given unusual weight to the conclusions reached by them successively.

The first group of questions.

What Compensation May a Railroad Collect, Free From State Interference, for Use of Its Facilities Employed in Transportation?

Assuming that a correct answer to this would be, what will yield a reasonable rate per cent. upon the fair value of the facilities at the time the service is rendered, the first logical step in the inquiry would be ascertainment of the value.

A railroad may have more than one kind of value. Commonly, it has at least two. One, the commercial, being what the road, or the aggregate of the securities representing the property in it, ought reasonably to fetch, if buyers could be found. This sort of value has little, if anything, to do with the question of how much the road has a right to earn. It looks to the other and quite different one, of how much the road actually can earn, at rates which controlling commercial conditions will permit.

This kind of value could not concern the public authority, unless a right to control the business management of the property be conceded to the latter.

It is understood that this right, even the right to manage badly, still rests with the owners. No existing legislation has taken the right from them. Public authority might be able to improve upon the owners' management, from a business standpoint; but upon no such ground could public authority interfere.

The right to exercise the interference here complained of has not been placed by the state upon the ground that the business of these corporations should be better managed than it has been by the corporations themselves.

The other sort of value of railroads is that to their owners, who have chosen to acquire and hold a thing of that kind. This sort of value springs from the right of owning property, and is inseparably connected with such right. It is inherent in property of every species. It is the measure of the recompense which the owner may exact from those who destroy or impair, or demand the use of, any form of property.

Concerning the correct method of estimating this latter kind of value, there are divergent and conflicting views. Some, including counsel for the State in this controversy, contend that the true value of a railroad, on any given date, cannot exceed the amount of money that has actually been expended, up to that date, in producing it. The advocates of this mode of valuation are also inclined to deduct from the total expenditure for creating the property, such part of the money used as may have been derived from the operation of the property itself.

However, it is manifest, that an investment in property, and the value of the latter, may be largely different. In practice, the two things commonly vary.

The reasons why the mere investment, that is, the mere amount of the money actually spent in creating railway facilities, cannot be used as a measure of their owners' rights to charge for their use, are several.

Some of the more obvious and important are, that more money may have been spent in producing the facilities than was justifiable, and the patrons could not fairly be called upon to pay for the mistakes or for the extravagances of the builders.

Another is, that facilities planned and produced according to the standards of their time, may afterwards have been allowed to become inferior, less useful, and less efficient than those of later creation.

From a practical standpoint, the original-cost method of valuing railroad properties would now be impossible ; as it is matter of common knowledge, that every railroad system of any consequence, in this country, is but an aggregation of numerous smaller roads, many of them built a generation or more ago, and concerning whose actual cost no reliable records ever were kept ; or, if any were kept, they had been lost or destroyed before the transfer of the property to present owners. Even if the actual cost of railroad properties could be reliably ascertained, it would not form a just basis of value for determining the earning rights of the property, as between its owners and the public.

To limit the right of charging for use of public utilities to a percentage of the money actually spent in creating the property, regardless of changes in actual value, is to say that investments in railroads are totally unlike all other kinds of investments in business undertakings, save in the solitary respect of being equally liable to be totally lost. Naturally that single point of resemblance would be incapable of removal.

In all other classes of property, risk of loss from impairment of values finds its counterweight in the chance of profit from increase in values ; but the advocates of the cost basis for measuring the earning right on public utilities do not admit its applicability to these. They are forced to the position, that, although the owner

of public utilities may have to lose, through depreciation of his properties, he must not, like owners of every other kind of property, be allowed to benefit from their appreciation.

If the value of railway facilities forms the basis for computing earning rights upon them, such value must be that at the time the facilities are used.

How is the value of a railway to be obtained? The value of things commonly bought and sold in the market is fixed by the market price. If such a thing be wanted, payment of such price will procure it. Hence, its value cannot be greater or less. Not so with railways.

Sometimes railways are bought and sold; but every railway differs much from every other one, and for this reason, if for no other, there could never be such a thing as a market price for railways. Besides, owing to their great cost and value, buyers of railways must be few, even where there are any.

The aggregate of the market values of the stocks and bonds on the property, has also been suggested as affording a reliable measure of value.

In the first place, the market values of railway securities are not fixed solely by the earning power of the property on which they rest. Sometimes they reach figures fairly coinciding with that power, but often market prices are moved up and down by forces outside the meritsof the security itself, and consequently exhibit frequent and wide fluctuations, having little relation to the state of the railway's business.

In the next place, even if market prices always conformed to earnings, to say that a railway may base it rates on such prices would merely be reasoning in a circle. By exacting from its patrons excessive charges, its net earnings, and likely with them the price of its issues, would be larger; so that the company would always be in position to make its rates as

high as it should wish, subject only to the commercial limitation that they must not be high enough to check trade. Subject to that limitation, the company's rights to earn would always climb with its tariffs.

Cost of Reproduction the Most Correct Measure of Value.

Of all suggested methods for arriving at the values of railroads, to serve as bases for computing earning rights, the inventory of the elements of the property—for short called reproduction cost—in its condition at the time of performing the service, is best. In fact, it is the only one having the indispensable qualities of being at once approximately correct, and absolutely fair, both to owners and patrons.

Naturally, to make a valuation absolutely accurate, for any selected day, of a property so extensive as a railway system, with its thousands of miles of tracks, and thousands of acres of right of way, terminal and station yards, is not to be expected.

The valuation which a government may demand, in controversies over the earning rights of railroads, must be limited to the best one permitted by the nature of the property to be valued. Otherwise, a right to earn upon the property would be practically worthless; for the owner could never enforce it. Such a right would be mere empty theory.

Is not that property in effect outlawed, which is defensible only by evidence of a kind impossible from the property's nature?

The cost-of-reproduction basis of valuing railroad property is as free from complication as consists with the nature of the property to be valued. It goes on the assumption that, at the time when made, all exists in the places where the rail-

road is, save the railroad itself. Experienced civil engineers and railroad builders, acquainted with conditions affecting railroad building in that region, with proper study can devise feasible plans for reproducing the roads in the shortest practicable time, and at the least practicable cost. Experienced real estate dealers can estimate, approximately, what would have to be paid for the areas of land now held by the railroad, if the road were non-existent, and the right-of-way and other lands had to be obtained over again.

Especially accurate must be such estimates, where for years the estimators have been employed upon the property to be valued, and under whose management it has been brought to its existing state.

This method of estimating merely says, if the lands held and used by the road were to be obtained now, the total cost of obtaining them would be a designated amount; if the grade, bridges, tracks and other structures, forming the road, were not there, but were to be produced there, from now on, until the building process should have been completed, the total building cost would be another designated amount; and so on, covering all the elements of the properties, as they at present exist.

Can the substantial correctness of valuing by such a process be doubted? What is the true value of a land area used for railroad purposes, if not what the road would have to pay to get it, if the road did not already own it? What is the true value of a yard of grading in any railroad, if not the cost of doing it now, had it not already been done?

What is the true value of a mile of track, or a bridge, in any railroad, if not the cost of its construction now, had it not already been built?

If, after the property has been created, real estate in the region occupied by it goes down, or if prices of labor and materials used in railway building decrease, the patrons would

get the benefit of the fall. The earning rights of the property would decrease proportionately.

On the other hand if, after the building of the road, prices of labor and materials have advanced, would it not be fair, that the owners, who have borne all the risk of their fall, should have the benefit of their rise? Experience has invariably shown, that conditions causing rise in values of lands held and occupied for railroad purposes necessarily benefit patrons even more than they benefit the roads. Rise in such values comes mainly from a single cause—development of business in the particular district or town where the roads run.

This means more tons and more passengers using the properties. The numbers of these always increase more rapidly than property values. This increase in volume of traffic permits and occasions decrease in rates. It has invariably done so. All experience has shown that railroad rates are commonly lowest in the territory where land values have advanced most. Even if the fact were otherwise, why should not the benefits of advances in values justly be theirs, who have borne all the risks of declines?

Of course, this method of valuation would be applicable and fair only to properties well located, well built, well equipped, and in general well adapted for moving the traffic of the country in which they are situated. The statistics of traffic and operating cost on Northern Pacific and Great Northern, in evidence here, abundantly prove each of them to belong to that class of properties.

In applying this plan of valuation to railroads badly designed or located, or built on extravagant standards, beyond the needs of the territory they serve, there should be a proper abatement from cost of reproduction, for arriving at the just and true value which is to serve as the basis of the earning rights of the property.

These may be considered the official views of the state, also.

In January, 1906, the Railway Commission, as a movement in the campaign for a general reduction of railway tariffs in the state then on, planned the making of a valuation of all the railroad properties in the state; and for that purpose employed Mr. Dwight C. Morgan, a civil engineer, who was afterwards the state's sole expert witness on the subject of valuations in these suits.

The Railway Commission, after a conference with its engineer, adopted the cost-of-reproduction basis, and forwarded to each company owning or operating a railway located within the state, a circular request for a report upon that basis, to be made on a form furnished by the Commission. This form divided the matter into about forty classes. Record, Vol. 5, pp. 1765-1770. N. P.

This classification has been substantially followed, in all the valuation work since done, whether for the roads or the state; also by the Master in his report. For same, see Master's Report, Subd. VII.

The state has never withdrawn from its position on this point, although some of its counsel have expended considerable time and effort, of others as well as of themselves, in trying to find out how much these properties actually cost their original owners, claiming such cost to be the best measure of their value as between the present owners and the public.

The valuations presented by the railways in the valuation tables in these cases include nothing for franchises, good will, or any other intangible thing. They include only physical elements, making up the roads, their appurtenances, and equipment. These naturally divide into three groups—Land, the improvements put upon it, and the equipment.

Land Values.

Regarding land values, state and companies were considerably apart, the appraisements of the state being much below those of the companies.

These wide differences on real estate valuations must mainly be attributed to difference in the bases from which the two sides respectively proceeded.

In making their valuations, the companies acted upon the view, that the cost of reproducing the properties must necessarily be what would actually have to be paid to reproduce them. As the necessary land must, in the process of reproduction, be acquired, either by purchase or condemnation, what the reproducer would actually have to pay, must be the true measure of its reproduction value.

The state went upon a curious theory, formulated and expounded by Mr. Morgan, its engineer, that for reproducing the land holdings, there merely should be allowed what, theoretically, the owners *ought* to be willing to accept, in view of previous sales of isolated parcels in zones located at various degrees of remoteness from the land needed by the railroad, and regardless of their being either fit or wanted for railroad purposes. Mr. Morgan did not pretend that land owners could be induced to sell to a railroad at prices fixed according to his theory, or that a railroad ever could actually obtain land at such prices.

His method of valuation is explained by his evidence on that subject. Record, Vol. 5, pp. 1762–1827, 1864–1921, 1970–2024, 2033–2036, 2117–2182, N. P. Also by the Master's report, Subd. VII.

With perfect accuracy it may be asserted that the state produced no witness on the subject of what reproduction of the land holdings might be expected *actually* to cost; and that all witnesses to that point were produced by complainants.

Lands required and used by railroads fall into two general classes—the long, narrow strip occupied by the road, and the broader spaces located within or contiguous to the towns, required for stations, terminal yards, and shops.

A number of very important conditions affect the acquisition of lands for railroads, both in town and country, that do not operate to any considerable degree in acquisitions for most other purposes. One of them is the large quantity required at the same time. It is a prevailing law in all manner of trading, that a demand at one time for a large quantity of any kind of property puts up its price. Another condition is, that the company must have its land, whether for road or for stations and terminals, in some practically fixed place. The location of the line is mostly controlled by a number of physical conditions, which would not permit its wandering very far in any direction on a hunt for cheaper right-of-way. Stations, yards, and terminals must be on the line. In towns and cities, the conformation of the ground commonly restricts the choice of location to some narrow district. Costly private structures and improvements also have an influence in a similar direction. In towns and cities, the facilities of the railways must be centrally located—as near as possible to, and even in, the heart of business. Such locations are imperative for meeting the public convenience. Stations and terminals lying in places remote from the business they are to serve are of small use to the public, and little value to the company. They are never worth having.

A third of such conditions is, that the railroad must have the whole of the space it requires in any spot; its spaces cannot be intermingled with those occupied by others. They must also have especial shape to permit convenient and economical operation.

These things mean that, in towns, and especially in important cities and large business centers, the getting of the land

needed for a railroad is simultaneous trading with a large number of adjacent owners. Nothing makes prices and values any where mount like that.

An industrial or commercial concern, in obtaining land for its use, is practically unrestricted as to locality. If prices be too high in one part of the town, or on a particular street, it can as well go elsewhere. In the vast majority of instances, too, the area sought would be but a small fraction of what a railway would need, involving dealings with a proportionately smaller number of owners.

A fourth of such conditions, but by no means a minor one, is the common view that railroad corporations are rich, and able to pay for the ground they must have, at about any price the owner may exact.

These four conditions acting together have the unavoidable practical effect of advancing prices of real estate, both in town and country, that a railroad requires, far beyond the average of those previously obtaining in or near the same locality, in ordinary transactions between individuals, or where an ordinary corporation is buyer.

To invoke the state's power of eminent domain for such acquisitions has rarely been found a cheapening process. Common experience has shown that no more effective combination to raise prices is possible, than that invariably formed by a lot of respondents in a big condemnation proceeding. Private negotiation has been found to be cheaper for the railroad, in the long run.

What land needed by a railroad will cost, will be what those who own it, when the railroad comes, can be induced to accept for it.

What the railroad will have to pay, must form the measure of the value of the land for railroad purposes.

To prices at which property of the vicinity would go, in

ordinary trading, very substantial percentages must be added, when the railroad gets it.

The invariable presence of these conditions is conceded by the state. The difference between the parties relates mainly to the extent of their operation on asking prices and, through prices, on cost.

In estimating " railroad " values of the spaces comprising Northern Pacific's right of way, stations and terminals, within the State of Minnesota, outside the terminal cities, the state's witness thought it right to multiply what, under his peculiar method, he had found to be " actual " values, by three. Record, Vol. 5, pp. 1804–1806, 1813, N. P.

To " actual " values, estimated by his method, of the spaces occupied by the roads in the large terminal cities, he conceded that 75 per cent. should be added. Record, Vol. 5, pp. 1807–1808, N. P.

However, in the process of arriving at the estimates of land values presented by complainants, the foregoing considerations were left out of view. The real estate experts who appraised the land holdings of Northern Pacific and Great Northern, in the terminal cities, had not been informed of the purpose of their valuations Record, vol. 2, pp. 361, 362, N. P. Hence, these valuers estimated the railroad areas as mere real estate, having value upon a like basis as that of adjacent property, held in small parcels by private owners for general purposes.

For reaching the valuations allowed by him, the master was willing merely to add to the estimates of the real estate experts made on the mentioned basis, 5 per cent. for the land areas in St. Paul, 5 per cent. for those in Minneapolis, and 25 per cent. for those in Duluth ; additions wholly inadequate to represent the difference between values on such a basis, and the unavoidable cost of obtaining the entire railroad holding of the respective companies for railroad purposes.

Master's Report, Sub. *VII.*

While the state was content with a single witness on the question of real estate values, so prominent and important here, for complainants eight testified in regard to it, of whom seven were men outside the official organization of the companies.

What the evidence discloses regarding the qualifications of the several witnesses, should not be overlooked.

Qualifications of Witnesses on the Subject of Land Values.

Naturally, upon such a question, an important part of what any witness can, with pertinence, speak, must be matter of judgment. Experience and knowledge to form reliable judgments must be of first consequence. Mr. Morgan, by profession and training, is a civil engineer. His experience in that profession is stated in the Record, Vol. 5, pp. 1762–1765, N. P. Buying and selling real estate, or procuring right of way for railways, do not appear to have formed much of it. His knowledge of the subject may rightly be qualified as historical and theoretical. On the other hand, each of the witnesses on real estate values, called for complainants, was a practical man, of long and large experience in buying and selling real property in places where the lands of the companies lie.

The qualifications of Mr. Cooper appear in Record, Vol. 2, pp. 122–126, N. P; those of Mr. Stryker, Vol. 2, pp. 454–455, N. P; those of Mr. Elwood, Vol. 2, pp. 480–481, N. P; those of Mr. Watson, Vol. 2, pp. 507–508, N. P; those of Mr. Barney, Vol. 3, pp. 1092–1093, N. P; those of Mr. Read, Vol. 4, pp. 1116–1117, N. P; those of Mr. Taylor, Vol. 4, pp. 1420–1421, N. P; those of Mr. Hayden, Vol. 2, pp. 162–165, G. N.

Mr. Cooper had long been Land Commissioner of Northern Pacific, having in charge all its real estate business. Large

areas of land in towns and cities had been acquired for the Company, under his direction. Messrs. Watson, Taylor and Read for many years had been real estate dealers in St. Paul. Messrs. Barney and Ellwood had been the same at Minneapolis; Mr. Stryker had been the same at Duluth.

Each of these men had long been conversant with real estate values in his city. Each had acted in the purchase of much land in his town for railroads. The experience of each in that special line of trading had run through a long period. At the request of the companies here, each had made a systematic and thorough examination of their land holdings in his town, of land values in general in the vicinities of the railroad holdings, and, in particular, of the values of the latter.

The valuation by Mr. Cooper of Northern Pacific's right of way and other land holdings in the state, outside of the three terminal cities, was made with the aid of numerous experts in land values living along the lines. The corresponding valuation by Mr. Hayden for Great Northern, was prepared in a similar manner. None of the experts residing outside the terminal cities was called as a witness. They were too numerous; but their estimates were contained in those of Messrs. Cooper and Hayden.

The estimates were the judgment of the witnesses based on knowledge of sales of land in the same general localities through a long space of time; but what could estimates of values of things not daily dealt in on the markets be, if not judgment founded on observation and experience?

If the railroads did not now own these lands, but should come along seeking to obtain them, the prices they would have to pay necessarily would include something for the improvements; so, these valuations had to include something for such probable improvements, in order to be correct.

The aggregate value of the rights of way and real estate of the two companies in Minnesota, as estimated by complainants' witnesses was, for Northern Pacific, $25,300,836; for Great Northern, $30,635,921.

The Master exercised his judgment, based on the evidence, and on his personal observation and experience of many years in such matters, by fixing the reproduction values of such rights of way and real estate, that for Northern Pacific at $21,024,562, and that for Great Northern, at $25,172,650. Findings of Master, Sub. VII.

Valuation of the Improvements on the Land.

Upon values of the improvements, as upon those of the lands and rights of way, but one witness, Mr. Morgan again, was called by the state. On the other hand, Mr. James J. Hill, Chairman Board of Directors of Great Northern Railway Company; Mr. Howard Elliott, President of Northern Pacific Railway Company; Mr. W. L. Darling, Chief Engineer of Northern Pacific; Mr. A. H. Hogeland, Chief Engineer of Great Northern; Mr. John F. Stevens, and Mr. John B. Berry, testified on these questions for complainants.

Although the matters about which Messrs. Elliott, Darling and Berry spoke, related, in terms, mainly to Northern Pacific, and those about which Messrs. Hill, Hogeland and Stevens spoke, related, in terms, mainly to Great Northern, in effect, all six were testifying upon the same matters. The two systems occupy practically the same region, and the important points between which they run are the same. Construction materials are supplied from the same sources, and labor forces are obtained from the same labor markets. All conditions affecting cost of construction are substantially identical on the two systems; and cost figures correct for the one are equally applicable to the other.

Hence, Northern Pacific and Great Northern each had six witnesses as to all construction work included in its properties.

As an important element in this class of testimony is also the expression of a judgment which the witness has formed, its value must ultimately rest upon the qualification of the witness to form correct judgments upon the subject. This qualification is the knowledge and experience of the witness, regarding the general subject, and his acquaintance with the especial facts regarding, and the especial conditions surrounding, the particular thing forming the subject of the judgment.

Hence, among the most important parts of the testimony of each of the seven who have testified here upon the subject of construction cost, are those showing his general knowledge and experience as a designer and builder of railways, and his special knowledge and observation of the conditions of railroad building in the places where the Northern Pacific and Great Northern systems lie. Especially important is his knowledge of just what work and materials would be required for the reproduction, as they are to-day, of those railroads, and of all the general and local conditions under which the work would have to be done.

Mr. Hill's qualifications as a railroad builder appear, Record, Vol. 3, p. 1232, G. N.

Mr. Elliott's qualifications as engineer and railroad builder appear, Record, Vol. 4, pp. 1217–1218, N. P.

Mr. Morgan's qualifications as a railroad builder appear, Record, Vol. 5, pp. 1762-1764, 2173, N. P. His knowledge of Northern Pacific and Great Northern systems are shown, Record, Vol. 5, pp. 2173–2175, N. P.

Mr. Darling's qualifications as Engineer, and the extent of his knowledge of Northern Pacific's railways, in particular, are shown, Record, Vol. 2, pp. 5–6, N. P.

Mr. Berry's qualifications as Engineer, and the extent of his knowledge of Northern Pacific's railways, are shown, Record, Vol. 3, pp. 718–726, N. P.

Mr. Hogeland's qualifications as Engineer, and his knowledge of Great Northern, in particular, are stated in Record, Vol. 2, pp. 2–5, G. N.

Mr. Steven's qualifications as Engineer, and his special familiarity with the Great Northern railways, appear, Record, Vol. 2, pp. 408–414, G. N.

Figures of cost of construction work, for each railway, given by their respective Chief Engineers, and by Messrs. Hill and Elliott, and confirmed by Messrs. Stevens and Berry, were mainly determined by actual cost of much like work performed on the system, through lengthy periods immediately preceding the preparation of the cost tables submitted. The estimates of reproduction cost, prepared by the railway engineers, therefore, had the foundation of actual experience in the production of these same properties. The element of mere judgment employed in the preparation of their tables was practically limited to forecasting the probable stability of prices for labor and materials during the respective periods—5 years in case of Northern Pacific, and 8 years in case of Great Northern—assumed for reproduction of the properties within the State.

For the purposes of their estimates, the railway engineers assumed that the average prices which had obtained during a series of years in the past, would remain substantially the average for a like period in future; or, that, at least, the average for the future period would not be smaller.

Comparison of the testimony of Mr. Morgan upon construction costs with that of the others who testified, shows that the difference between the views of Mr. Morgan and those of the others had chiefly resulted from difference in amount of experience in railway building and maintenance in general,

and from difference in knowledge concerning these railroads in particular.

It would be no reflection upon Mr. Morgan's intelligence, honesty or schooling, to suggest that had his construction experience, and his knowledge of these railways equaled those of the others who testified, the divergence between his views and theirs would have been as small as that of their respective views between themselves. No reason exists for thinking that any other Engineer, with like attainments and experience, would materially disagree with the views of Darling, Hogeland, Stevens, and Berry, expressed in these cases.

Railway Engineers' Estimates of Cost of Doing Work Based on Definite Plans.

Production or reproduction of a railway, intelligently and economically, requires a definite plan of the work in advance of its commencement. So, the railway engineers here, as bases of their estimates of reproduction cost, carefully considered how the work could best be done, and the period of time necessary for doing it in that way.

In the performance of such big undertakings as reproduction of the roads and other facilities of Northern Pacific and Great Northern in Minnesota, it is manifest that plan and rate of progress in the work must be controlling factors in matter of cost.

For reproducing the 1,625 miles of tracks, and attending facilities of Northern Pacific, in Minnesota, it was estimated that a period of five years should be taken.

The system within the state was divided into districts, for the most feasible and economic handling of the work.

For reproducing the 2,779 miles of tracks, and other facilities within the state, of Great Northern, eight years were allowed and the system was also divided into corresponding working districts.

The engineers considered that reproduction within these respective periods would be physically practicable, and that the rates at which materials and labor would have to be expended in order to complete the work within those periods, would not be such as to overtax their normal supply, and thereby advance prices.

It was assumed that, to build faster would materially increase cost.

One of the railway engineers did consider that, under the rapid decrease of timber supply now going on, the price of oak ties would likely advance. The quantity of these, however, would be too small to have appreciable effect on results, and the average price of all ties as used by this engineer was shown to be lower than average prices then apparently being paid. Furthermore, the price adopted by the Master was still lower.

For the state, Mr. Morgan, in working out his estimate, also allowed lengthy periods for reproducing Northern Pacific and Great Northern properties in the state. Whether his plan included systematic division of the lines into working districts, cannot be gathered from his testimony. Likely his processes of thinking the matter out had not developed enough for that.

The method of sub-division into working districts, used by the railway engineers, is shown in Exhibit 1, Hogeland. Record, Comps. Exhibits, G. N. This exhibit will repay careful study. It discloses the systematic care with which the railway engineers went about their task. It was not meant that the portions of the line to be completed in any year should all lie contiguous; but that economy and facility in doing work should control such matters entirely.

The cost of building a railroad with its attending facilities is made up, first, of the labor and material going into the roadway, bridges, tracks, structures, and the like, and secondly, of

certain necessary general expenses, involved in the work. These latter comprise Engineering service, Interest during the construction period on the money required to meet construction outlays, Contingencies of the work, unforeseen at the beginning, and adding to cost, and Transportation of men and materials from the points where they are procured to the localities where they are to be used.

In making up their estimates of reproduction cost, the railway engineers could procure from the records of the companies nearly all information needed for computing the quantities of work and materials actually in the roads as they now are. The importance of keeping exact records of construction quantities and costs has not been fully appreciated by the railroads of the country until within a few years past; so that few, if any such records are now complete; but Mr. Darling had been so long associated with Northern Pacific, and Mr. Hogeland with Great Northern, and such large proportions of the work of producing the railways of his system as they now are, had been performed under the direct observation and supervision of each of them, that each was able to supply from his knowledge of the property, with reasonable accuracy, the facts regarding quantities and qualities of work and materials which had failed to get upon the records; so that the aggregate of the quantities and kinds of work and materials appearing upon the cost tables prepared by these engineers are entitled to confidence as being practically correct.

The prices applied by Mr. Darling and Mr. Hogeland, to the ascertained and estimated quantities of work of the various kinds entering into the roads, were the average of those which the companies had actually paid for the respective classes through a long series of years preceding the making of the estimates contained in the tables. Practically all materials were estimated at the current prices of the time.

Of the second group of elements in building cost—Engineering expense, Interest during construction, Contingencies, and Transportation—by the practice of railroad builders and engineers, the first three are commonly estimated by the method of assuming for each a certain percentage of the expenditure for other elements of the work. That plan has been followed here, by the engineer for the state, as well as by those for the railroads.

Interest During Construction.

An important, and at the same time an unavoidable, element in cost of railway building, is interest on construction outlays made during the construction period. This has not been contested by the state. Mr. Morgan's forms for construction cost tables have invariably embraced an item for such interest. Neither has there been, between the state and the companies, any material difference over the length of time for which interest should be computed.

Assuming that the work, and consequently the resulting outlay, proceeds at fairly even speed, from the beginning to completion, the money for the outlay will have had an aggregate use in the building equal to that of the whole for one-half the length of the building period. This is the length of time employed here by both the state and the companies for computing interest.

The bulk of contention over the interest feature, has, in substance, been, whether the basis should be the rate which would actually have to be paid for use of the money, or some other assumed, or conventional rate, fixed either arbitrarily, or in some theoretical way coming to an arbitrary rate in the end.

It is matter of common knowledge, as well as of common sense, that use of money for original construction

costs any enterprise more than that of money raised by the same concern later on, when its business has reached a paying basis. This is true whether the promoters themselves advance the money, or it is borrowed from outside lenders. The construction period is that in which security is smallest, risk of loss greatest, and credit weakest—conditions fixing the value of money, and the rates reasonably chargeable for its use.

Interest on money to pay for labor and materials expended in creating a railroad is as much part of the actual cost of the road, and consequently as much part of reproduction value, as cost of the labor and materials themselves.

Nevertheless, the state is willing to concede only an interest rate of four per cent. per year; and the Master adopted that rate likewise. Neither has suggested how or where construction money could be had at such a rate. It is at least three per cent. below what any builder of a new railroad in Minnesota would have to pay for his construction money.

The laws of the state fix six per cent. per year as the lawful interest rate, in absence of express contract fixing a higher one; which may be up to ten.

It is conceded that some railroad bonds are on a market basis of around four per cent. Invariably such bonds represent but a minor fraction of the total investment in an enterprise which has become successful, and are liens ahead of other securities on the property, on the holders of which, in the order of their seniority, the risks of the enterprise all lie. But for these lower classes of securities, taking substantially all the chances of the business, four per cent. securities could have no existence. The condition assumed here is reproduction of the entire properties. Hence, not a part merely of the construction money would have to be raised,

but all; and it would be a question of rates for the total. Part might be on first-lien bonds; part on deferred-lien bonds; part on preferred stock, and part on common stock. The interest rate would rise as the quality of the security graded down. It would be a question of the average of all. Certainly the average would be far above four per cent., however smartly the business might be handled.

Unless, therefore, some earnings during the construction period could be found, reducing the cost of the construction money, four per cent. was much too small an allowance for interest. The state suggested that such earnings would be probable, and it must be assumed that the Master in concurring with its estimate of a proper interest rate fell in with this view.

However, witnesses for the complainants, all men of long and large experience as practical railroad builders, were of the opposite view. To their minds, any traffic handled during the construction period would have to be moved under conditions such that the cost of moving would surely consume the total earnings, if not put the company to actual loss. Record, Vol. 7, pp. 3239–3241, N. P. Record, Vol. 2, pp. 52–54, G. N. Record, Vol. 2, pp. 449–451, G. N. Record, Vol. 3, pp. 1257–1258, G. N.

Interest during construction forms an important item in every estimate of reproduction cost presented to the Master. However, the size of the item does not impair its legitimacy. Railroad building is a business of big figures, in spite of the best efforts to keep figures down.

The legitimate question here is, whether an item under view would actually cost the amount assigned to it. If yes, the item merits allowance at that amount.

For the state it has been suggested that, in fact, the production of the lines of road here concerned did not re-

quire interest charges to an extent that would be unavoidable under any practicable plan for reproducing them as they now are.

When the lines were originally built, and began operation, the regions they served were new—either wholly unsettled or at most sparsely peopled and little cultivated. Standards of location and construction were low. Little grading was involved, the grade line keeping close to the natural surface of the ground, and avoiding too severe rises and falls by use of much curvature of high degree. Materials for tracks and bridges were slender. Equipment was small and light; it had to be so, to be useable on such tracks.

The money cost of original building of course corresponded with the character of the thing built. Traffic was small, but rates were high, compared with those of the present, and business grew rapidly in a new country. The whole thing was poor, and of small capacity; but good enough for the time and the volume of traffic available, since none better ran into the same region or competed for the same business. Besides, the roads of those day in Minnesota, poor as they were, had capacity much in excess of the business procurable.

In producing such roads, cost for use of money during construction did not aggregate so much, although interest rates averaged considerably larger. Amounts needed were relatively so much smaller; and the roads could be built and put into paying operation so much more quickly.

In process of time such conditions have passed away. Railroads in Minnesota must now be located, built and equipped on high standards, with low grades, small curvature, heavy bridges and track materials, and be equipped with capacious cars and big locomotives.

A road of the old standards, located where the present systems lie, would be worthless. It could not do business in competition with the higher class lines.

To now produce a railroad in Minnesota on the established standards of efficiency, would require heavy interest charges during the construction period, because so much money would be needed, and the construction period must be so long. It could not enter the operation period with any hope of net earnings until completed up to the standard.

Contingencies.

However carefully cost of construction work may be estimated at the outset, if the job be extensive, and especially, as assumed here, if it last through a considerable period of time, many things unforseen at the beginning must happen, which add to the total outlay. Floods, bad weather for doing work, labor troubles, advances in prices of work and materials—these are a few of the multitude of unexpected happenings that invariably attend all large and lengthy building undertakings.

In any sober estimate of construction cost, these uncertainties must be taken into the reckoning.

The state's engineer concurs, and all his own estimates of reproduction cost include a percentage for contingencies. On practically all questions in this controversy, the state and the roads agree upon the general principle that should govern; most of the differences between the sides being confined to the method and the extent of the application of the principle. The matter of contingencies forms no exception, and it seems certain that Mr. Morgan would differ but little from the other engineers, if the estimate concerned an original building. His position on this subject, in effect, is, that for reproducing an existing railroad, the experience obtained in the original building would eliminate many elements of uncertainty that admittedly must attend an original construction. This view seems plausible when stated; but the other engineers accord it little weight. Their larger ex-

perience in railway building has taught them that a new set of accidents would be sure to happen in reproducing any railroad, increasing quite as much the estimated cost as would those which happened during original construction.

Consequently, they considered a like percentage should be reckoned for contingencies in reproduction, as for those in original construction. Record, Vol. 2, pp. 40–45, G. N. Record, Vol. 2, pp. 444–447, G. N. Record, Vol. 2, pp. 489–490, G. N. Record, Vol. 3, 1252–1254, G. N.

Transportation.

Another large element in construction cost is transportation of the materials used in the work, and the persons of the working and superintending forces. Here, once more, difference in opinion undoubtedly referable to difference in extent of experience.

The state's witness assumes that, aside from occasional instances where other carriers would be employed, as construction advanced from terminals toward the interior of the country, needed men and materials would be moved by the company itself, in its own trains, over its own tracks, as the latter should be laid ; and that there should then be charged against construction cost some low rate assumed to represent actual operating expense.

The state's witness did not make clear any basis for ascertaining operation cost of that kind of transportation.

One defect in such a plan for moving men and materials would be, that, under it, the reproduction process must begin at one end of the system and work through to the other. The practical railroad builders laid out their reproduction plans with a different view. They considered that the maximum of progress and economy in performance of the work would be attained by proceeding at the same time with building operations in several localities, disconnected from each other, and even far apart.

This would require the doing of the bulk of the construction teansportation in advance of track-laying to the localities where the men and materials would be needed. The services of other carriers would have to be employed for this, and the laws bind the latter to carry at tariff rates solely. In the opinion of the engineers and of the railroad managers called for complainants, wherever existing lines, under regular operation, can be employed to do the transportation for a line in process of building, that is invariably the cheapest method. They estimate that the costliest rail transportation used in railway building is that done over the new tracks. This results from the unfavorable conditions under which the traffic must be moved.

Consequently when, in their estimate, these engineers and the railroad managers compute transportation at tariff, this is not done to allow the builder a profit on that part of the same which may be done over its new lines, but merely to express what they think would, first or last, have to be paid out under this head, either in the form of freight bills and passenger tickets to another railroad, or in that of pay rolls and fuel and supply bills for the new road itself. Record, Vol. 7, pp. 3219-3220, N. P. Record, Vol. 2, pp. 131-132, 458-459, G. N.

The State's Proposal to Abate from Reproduction Cost for Assumed Deterioration of the Properties from Their Condition as New.

The roadway, the tracks upon it, the structures, the equipment of rolling stock, tools and machinery, together constitute the railroad.

From the nature of things, a portion of the elements of a railroad must deteriorate, by wear, by decay, by becoming obsolete in design. The tracks, the structures, the equipment are constantly wearing out, and as constantly being renewed.

It has not been asserted by the state, that the railways forming the Northern Pacific and Great Northern systems, in

Minnesota, are not well located, well designed, well built, and well maintained, in all their elements. The large traffic constantly being handled by each, with facility and economy—as a mass of figures forming parts of the evidence show—would alone suffice to prove those facts, if they did not stand admitted.

Naturally, on any day chosen for inspection of any railway, some parts could be found needing early renewal, and others showing more or less wear; although it is not claimed, in respect of either Northern Pacific or Great Northern, that replacements, renewals, and repairs are not regularly made as and when needed, nor that the efficiency or capacity of either for the handling of its transportation business is to the least extent decreased by anything connected with its physical condition.

Nevertheless, the state's engineer has made the fact that no railway can possibly be entirely new on any given day, the basis for a claim that, to arrive at a true valuation of these railroads, something quite substantial should be deducted from the cost of reproducing them.

This line of reasoning has the effect, that it considers only part of the elements making up the whole property, and excludes from view other elements quite as indispensible. It ignores the fact, that while some elements deteriorate from wear and stress, other and larger elements improve under them. The embankments of the roadway are of the latter sort.

For imparting to the roadway the solidity and firmness essential for stability and smoothness of track, time and wear are indispensible. Mr. Morgan recognizes this fact, and assumes to provide for it, by including in his estimate of reproduction value a special item that he designates "Adaptation and solidification of roadbed"; but the sum expressing, according to his view, the increase in value of these railroads, by the solidification which time, and the pressure of many

thousands of trains have given their embankments, is only about the half what he would deduct from value on account of other elements that could not all be new on any possible date.

The views of the other engineers and of the railroad managers were different. To their minds, a railroad that has been operated for a long period, and has been maintained in a high physical state, as have these, is as valuable as that railroad could ever be. By the assumption here, eight years would be required for reproducing Great Northern, and five years would be required for reproducing Northern Pacific; so that before either road could be completely reproduced, the portions first completed would have ceased to be entirely new.

In view of the admitted physical condition of these properties at the date taken for valuation, the other engineers and the railroad managers who testified, considered the increase in the value of the roadways resulting from time and wear more than enough to offset any possible decrease in value of other elements emanating from like causes. Record, Vol. 7, pp. 3227-3228, N. P. Record, Vol. 2, pp. 156–157, 509–510, 550–552, G. N. Record, Vol. 3, pp. 1006–1009, G. N.

The valuations made by the railway engineers accepted the respective railroads, each at the end of the reproduction period taken for it, as being equal in value to the roads as they were on the date fixed for their valuation; but, in reality, no reproduction of either, made in the one case in a five-year, and in the other in an eight-year period, would on completion be so good or so valuable as was the existing road at the date selected for its appraisement in this litigation. The reproduced railroad would lack the solidity and firmness of the existing one, and could acquire them only by the same process which has given them to the latter—time and use.

Hence, instead of deducting from reproduction cost something for deterioration, to arrive at correct present value, a substantial addition should rather be made representing the

difference in worth between a well seasoned and solidified road, and a green, soft one.

The valuations placed by the Master on these railways was not only conservative, but considerably smaller than the weight of the evidence justified. The experienced engineers and railroad builders testifying for the complainants were confident that the properties could not be reproduced for less than their estimates. Record, Vol. 7, pp. 3243–3247, N. P. Record, Vol. 2, pp. 60–64, 549, G. N.

Proportion of total value of roads, used in handling intrastate traffic.

These railroads within the State of Minnesota are each merely parts of larger systems, lying in several states. Their traffic is chiefly interstate; that moving wholly within the state forming but a small fraction of the total traffic moving within it, whether measured by tons, ton-miles or revenue. All traffic moving within the state uses the facilities of the roads in common.

Hence, an apportionment of the total value between the two sorts of use is required in any investigation for determining its owner's rights in regard to either class.

Several methods have been advocated for making such an apportionment—one using as a basis traffic units, that is, tons or ton-miles, and passengers or passenger-miles, in the two classes, and another using as a basis the respective gross earnings from the two. The former method would be very faulty, because the proportionate use by the two kinds of traffic is so unequal.

A large part of the total value of any railroad is in its terminals. Such is especially the fact in regard to Northern Pacific and Great Northern in Minnesota. Every passenger

travelling, and every freight consignment moving wholly within the state must have two complete terminal services within the state– one at point of starting, the other at point of destination; whereas, interstate passengers and freight have but one —at point of starting, or at point of destination, as the case may happen to be. Another inequality in proportionate use of facilities by freight of the two classes is in tracks and equipment. A great preponderance of evidence from operating and managing experts showed, that, owing to its much greater volume, and length of haul, interstate freight can be, and commonly is, moved in much larger car-loads and train-loads, than is intrastate. In effect, this is conceded by the state; the difference between the parties being here, as on most other questions in the litigation, merely a matter of extent.

Every train moving on railroad tracks not only occupies the length of space underneath it, but, from the demands of safe operation must always have, both in its front and rear, a clear space running from several to many times its own length, depending upon its class, and the rate of speed at which it is scheduled. The aggregate of these three spaces—in front, underneath, and in the rear—is the track space which every train uses. Hence, it is apparent that all trains in the same class use practically the same amount of track, and that a train moving empty, or lightly loaded, uses as much of the railroad's track facilities as when moving fully loaded; so that each ton moving in a train containing but 200 tons of load, uses five times the amount of road and its attendant facilities, as does a ton moving in a train containing 1,000 tons.

Similarly all cars moving in a train use practically the same amount of road and attendant facilities whether loaded or empty; so that each ton moving in a car containing 10 tons only, uses four times the amount of road and attendant facilities as does a ton moving in a car containing 40 tons.

What is true of proportionate use of roads is equally true of proportionate use of equipment. Five

times as many cars and three times as many locomotives would be needed to haul a given number of tons in 200-ton train loads as in 1000-ton train loads. The effects of underloading even go down to the shops, because so many more engines and cars must be used, and hence must be kept in repair.

These palpable facts are among the chief elements permitting the low rates under which freight going in large volumes commonly moves.

The complexity of a railroad's business makes impossible the keeping of accounts sufficiently detailed to determine the exact proportion of the total facilities used by any one passenger, or by any specific freight consignment. Hence, for purposes of this inquiry, the companies chose, as more accurate and more fair, the basis for apportionment of use of facilities between intra-state and inter-state approved by the Master, and used in his report, *i. e.*, the gross earnings basis.

This basis merely assumes what any way must be obvious, viz., that, in the long run, railway rates established under operation of general commercial and economic conditions, as the great body of the rates of these companies had been up to the date of the State's interference, arrange themselves according to the relative extent of the use of property, and the relative working outlay, involved in moving the different commodities taking the rates respectively.

In fact, the differences in relative operating cost, for moving different classes of traffic, mostly have for ultimate foundation, differences in relative amount of use of property per transportation unit. Some classes of traffic require use of larger proportions of terminals, equipment, and track, per ton-mile, than others. Such larger relative use of property must carry with itself a corresponding proportion of the cost of maintaining and operating the same property.

In this controversy, the ultimate apportionment of use of

property desired, is that between traffic moving on the average distances of about 100 miles, which constitutes the intra-State, and traffic moving on the average distances over 400 miles, which constitutes the inter-State. In all respects save volume and length of haul, and the conditions growing out of them, the two kinds of traffic are similar.

The Master found, that the relative operating cost, as between the short haul and the long haul freight traffic was *at least* as two and one-half to one, and probably as three to one.

Master's Report, sub. *XVII.*

Examination of the evidence on which these conclusions of the Master rest, shows that the witnesses giving it had for reasons for their estimates, chiefly the relative extent of the use of property by the respective classes of traffic.

If, therefore, the Master's findings and the estimates of witnesses whereon the findings rest, approximately be correct, the actual relative use of property, as between intra-State and inter-State on Northern Pacific and Great Northern was as two and one-half, or better as three, to one; and the apportionment of use of property for purposes of this controversy, should be about on that basis.

It will be noticed, however, that before the State's interference, commercial conditions in the region where Minnesota lies, had forced the average rates on the two classes considerably nearer together than the spread above mentioned. See below, pp. 44–45.

Apportionment on the gross earnings basis is on the relation of the rates as they exist. Hence, if the Master's apportionment was to any extent erroneous, or inexact, the error was against the Companies, and in favor of the State.

Apportionment of Use of Property Between Freight and Passenger Traffic.

The valuation of property within the state, used by intra-state and interstate traffic respectively, having been ascertained, the next logical step in the progress of the inquiry is to apportion the valuation used by all intra-state traffic between intra-state passengers and intra-state freight. The method adopted by the Master for his sub-apportionment, was also the best one practicable, viz., in proportion to gross earnings.

Percentage Upon Values of Properties Which the Roads Have the Right to Earn.

The valuations so reached are those on which the conceded right of the companies to make *some* earnings is based.

What is the extent of such right? Assuming it to be to make earnings at a *reasonable* rate on the value of the property and facilities used, at the time of the use, would such rate be *unreasonable*, if it should be that of the average of profit in the generality of other lines of business at the same time being carried on within the state? Of course conditions under which railway and other classes of business are conducted would have to be equated; but, on such a question could any conditions fairly be regarded pertinent, save those affecting the rate of gain or loss? Must the owners of railway properties be satisfied with a lower rate of profit than the owners of banks or manufactories, after the respective business risks shall have been equalized?

On the question of fair rate of return on value of property employed in the business, the following facts seem entitled to great weight:

Practically all the railroads trying to protect their property in this litigation rest on reorganizations of the whole, or of parts, of their properties.

The average mortality among railway enterprises in this country must quite equal that in the generality of business enterprises here. Considered on the basis of risk, the earning rights of American railroads, and of those operating within Minnesota in particular, should rank high.

Must the railroads be treated as underwriters of the other lines of business in their territory, by requiring them so to frame their tariffs as to insure to patrons profits satisfactory to the latter, without regard to whether such tariffs would produce at least fair profits to the roads ?

The minimum right of railroads to make profits must be to stand in that regard upon a level with the public in general, in the territory which they serve; conditions affecting average rates of loss or gain being taken into account. To precisely ascertain where that level is, would, of course, be impracticable, but a reasonably correct approximation should be attainable.

It is certain, that if the owners of these railroads had elected to loan their money upon ample real estate security, in Minnesota, instead of putting the same into the roads, the state would have permitted them to earn 10% per year upon it.

The business most nearly resembling railroads, in regard to volume of capital employed, is banking. Annually, the Comptroller of the Currency makes to Congress a report, covering the business operations of all National Banks of the country. This report is regularly published by the United States Government as one of its public documents. Its contents may therefore be cited in the courts of the United States, in argument, without prior introduction as evidence.

In this report, for the year 1910, on page 17, appears a

statement of capital, surplus, and profits, of the National Banks of the country, as a whole, for that year. The figures are as follows:

Average capital on which dividends were paid during the year	$963,457,549
Average surplus during the year	630,159,719
Net earnings over all expenses and deductions	154,167,489

Net earnings upon combined capital and surplus were 9.67 per cent., for the year.

The prior reports of the Comptroller show that similar rates of yearly profit have regularly been earned by the National Banks for a long succession of years.

It is matter of common observation, that risk of failure, and consequent loss of the investment, is far smaller with banks than with railways.

Railway investments in general, and those in Minnesota in particular, get no protection from monopoly. Scarcely anything within the state offers for shipment but that at least two rival carriers compete for it. In few lines of business carried on within the state is competition so real and so vigorous.

General laws of the state authorize the building of railroads between any points and over any route selected by projectors without further permission from any state authority.

Opportunity for the railroads to invoke the power of eminent domain in securing the land spaces needed for their transportation business can justly have no effect to reduce their earning rights; for, firstly, the right of the railroad in this respect is merely to pay for the land its full value; secondly, the power of eminent domain is never exercised in order to benefit the company by giving it a good investment, but always for the purpose of providing the public with an additional means of transportation; and lastly, in practice but

a small proportion of the company's total properties are acquired or held in that manner. The great bulk of values on which the earning rights of the companies rest have invariably been obtained by them in private dealings of the common sort.

A witness for the state was Mr. Charles F. Staples, a member of the same State Railway Commission which had made and published the orders here contested. In the course of his testimony, he expressed the opinion that 7 per cent. per year, taking together the succession of years good and bad, would be a fair return upon the actual fair value of the property of a railway company in his state used in its transportation business. Record, Vol. 6, pp. 2852–2853, N. P.

The Second Group of Questions.

Would the Receipts Permitted by the Laws and Orders in Question Suffice to Enable the Roads to Earn the Percentage Upon the Values of Their Properties, Employed in the Regulated Business, Which They Have a Right to Earn Thereon?

The values on which the railway companies have the right to make net earnings, and the rate at which they have the right to earn, having been ascertained, as approximately as the nature of the subject admits, the next group of questions for answer here consists of those relating to the rate of net earnings possible under the state tariffs.

The gross earnings from each class of traffic must be computed, the operating cost of transporting each class must be ascertained, then finding net becomes a matter of subtraction.

Apportionment of Total Operating Expense Incurred Within the State Among the Several Classes of Traffic Moving Therein; Firstly, Between Freight and Passenger, Secondly, Between the Inter- and the Intra-State of Each Class.

The problem is, apportionment of the total operating expense actually incurred within the state, or elsewhere on account of the traffic moved within it, on bases most nearly correct, and fairest as between the several classes of traffic.

Of total operating expenses incurred within, or apportioned to Minnesota, or to any other individual state, the established system of railroad accounting, used by each of these companies, permits around one-half to be traced directly to passenger traffic as a whole, or to freight traffic as a whole. The remaining expense incurred within the state is common to the total traffic.

For apportionment between the expenses common to the business in Minnesota and to that beyond, both sides have used substantially the same basis.

Naturally, for its ultimate foundation, any rule for apportionment of a common operating cost between the several classes of traffic must rest on the observation and judgment of experienced men. Its nature forbids precise accounting. Data for making any such could not be kept. Some of the figures brought forward by both sides in such mass, and especially those adduced by the state, ultimately rest on the judgment of one man, or on that of several men. The like must be true in about all kinds of statistical accounting. The value of the judgment, therefore, becomes a decisive matter. Such value depends upon the experience, the personal observation, the opportunity of becoming acquainted with the facts, and finally, the individual capacity of the person forming it.

On this group of questions, as on that concerned with valuation of properties, the state has practically limited itself to a single witness—this time Mr. Conway W. Hillman. His qualifications appear, Record, Vol. 7, pp. 3269-3271, N. P.

For the complainants and the companies, the following named seven testified, after having given the subject that extended study which its importance and its difficulties justify and demand, viz: Messrs. James J. Hill, Howard Elliott, Chester J. McPherson, William B. Doddridge, Frank E. Ward, Henry A. Gray, William G. Johnson, and George R. Martin.

The several qualifications of these gentlemen appear in the Record in the following places: Those of Mr. Hill, Vol. 3, p. 1232, G. N.; those of Mr. Elliott, Vol. 4, pp. 1217-1218, N. P.; of Mr. McPherson, Vol. 3, p. 1172, G. N.; of Mr. Doddridge, Vol. 3, pp. 1143-1144, G. N.; of Mr. Ward, Vol. 3, p. 1078-1079, G. N.; of Mr. Gray, Vol. 2, pp. 259-260, N. P.; Mr. Johnson, Vol. 4, pp. 1657-1658, N. P.; of Mr. Martin Vol. 3, p. 955, G. N.

Mr. Hill is Chairman of the Board of Directors of the Great Northern Railway, after having for many years been its President. Mr. Elliott is President of the Northern Pacific Railway, after having, for many years, been a managing officer of the Chicago, Burlington & Quincy Railroad, or of some of the railways in that system; Mr. McPherson, at the time of testifying, was assistant to the General Manager of the Missouri Pacific, and St. Louis & Iron Mountain Railways, after an experience of many years in responsible positions in the service of important railways of the country. Mr. Doddridge, at the time of testifying, was not officially connected with any railway concern; but had had many years experience in railway management; his last employment as a railway officer having been as General Manager of the Missouri Pacific Railway; Mr. Ward is General Manager of the Chicago, Burlington & Quincy Railroads East of the Missouri

River, after many years' service in official capacities on the Great Northern Railway, including that of General Manager.

Messrs. Gray and Johnson are accountants, of long experience on Northern Pacific and other railways, Mr. Gray being Comptroller and Mr. Johnson Assistant Comptroller of that company. Mr. Martin is also an accountant of large experience, and is now Comptroller of Great Northern Railway, in whose accounting department he has served for many years.

Messrs. Hill, Elliott, Ward, McPherson and Doddridge have been practical operating men and managers of railways, each for a lengthy period, whose daily experience brought him into immediate contact with the very problems about which he testified. The results of their work as managers depended upon their qualifications for solving these problems rightly.

Mr. Hillman and the other witnesses each disclosed to the Master his fitness to form a judgment upon the matters of judgment covered by his testimony, and the extent of his opportunities for becoming acquainted with the facts regarding such matters.

The Master accepted the judgment of the railway managers, on the points wherein they differed from Mr. Hillman. To do so, the Master did not have to question the intelligence, or the general accounting skill, of the state's witness. He merely attributed to the railroad men more knowledge of, and better judgment concerning, such purely railroad operation matters.

The chief question of fact in this branch of the inquiry is, the relative cost of performing the intra-state and the inter-state transportation, within the State of Minnesota; that is to say, upon what bases the total operating expenses incurred within, and charged to, the state should first be divided between the freight business, as one whole, and the passenger business, as another whole, and these results sub-divided be-

tween passenger business that is intra-state and inter-state, and freight business that is intra-state and inter-state.

If this division and sub-division be made upon the bases deemed by the companies to be, and adopted by the Master as, most nearly correct, the indisputable result will be, to show a rate of profit to the companies from their intra-state traffic within Minnesota, falling far below that required for producing a reasonable rate of return upon a fair valuation of the property used for that traffic, as such valuation has been found by the Master.

On many of the important railway systems of the country, the accounting departments practice division, for statistical purposes, and as a guide to management, of the total operating expenses between freight and passenger. Such statistics do not furnish the data used in settling money claims for or against the railway, and are not so exact as those which do; but they would poorly serve their purpose as guides in controlling operation, and be a great and aimless waste of the money of the companies, if not as accurate as the nature of the thing itself permits. Consequently, the assumption is justified, that the bases for such divisions, in use on the leading systems of the country, are substantially correct, and are reliable.

For making the division of operating expense between freight and passenger, the accounting officers of the companies who made the computations introduced by complainants, employed the method that has become standard in the country by long usage on the leading systems. Record, Vol. 8, pp. 4217-4221, N. P.

The basis employed by the witness for the state for such division seems to have been originated by himself, for the special purposes of this controversy. He did not name any important railway where it is in use.

With regard to subdivision of operating expenses between intra-state and inter-state business, it is not known that any

company has ever tried to make it, save for some special and rare occasion, like the present one. No general usage among railways concerning it has therefore grown up. It is a question for settlement under the best lights obtainable.

The State tariffs recognize a correct method in making rates, but altogether are too low.

On Northern Pacific, in business year 1908, the one selected for statistical purposes of this character, because it was the last complete year ended before the making of the statistical tables used on the hearing, and also because it was deemed a year of normal business, 6,418,390 tons of commercial freight were hauled on the Minnesota lines, of which 1,249,286, thus about one-fifth, were intra-state. The total ton-miles, that is, the total traffic units, made by all freight on Northern Pacific within the State that year, were 1,091,290,482, of which the intra-state made 130,580,988, thus about one-eighth. Record, Complainant's Exhibits, Exhibit No. 80, Elliott, N. P.

On Great Northern, in the same business year, selected for like reasons, 14,353,755 tons of commercial freight were hauled, of which 1,511,487, thus about one-eighth, were intra-state. The total ton-miles made by all freight on Great Northern, within the state that year, were 2,123,744,733, on which the intra-state were 171,317,766, thus about one-twelfth. Record, Complainant's Exhibits, Exhibit 53, Ward, G. N.

The average gross earnings, per traffic unit on this business, was as follows:

Northern Pacific, intra-state	1.1910c.	per ton-mile
inter-state	0.827c.	"
Great Northern, intra-state	1.381c.	
inter-state	0.681c.	

Diversity in the character of the traffic of the two companies, within the state, accounted for the difference in the

gross earnings per unit. On Northern Pacific a larger volume of carload freight between Duluth and the Twin Cities, moving entirely within the state, brought the figure for intra-state below that for Great Northern, under similar tariffs. On Great Northern, a mass of inter-state traffic consisting of iron ore, moving in train loads, at a low rate, from the Mines in Minnesota to ore docks in Wisconsin, brought the figure for inter-state below that for Northern Pacific, which had no corresponding traffic.

No one here contends that state boundaries figure in the question of relative operating cost for inter- and intra-state traffic, nor that operating conditions in Minnesota are more expensive than those in adjacent regions.

The main difference comes from the smallness of the individual shipments, the smallness of the total volume moving, and the shortness of the haul, of intra-state freight, in comparison with those of inter-state.

The two terminal services within the state, for intra-state, against one only, within it, for inter-state, is also an additional cost of the former incurred within the state; the second terminal service which every inter-state shipment somewhere receives, being charged to the other state or territory where it was rendered, and consequently forming no part of operating expense in Minnesota; which is the expense here to be apportioned.

The average lengths of haul of the two grand classes, for the business year 1908, were as follows:

Northern Pacific; Intra-state 104.52 miles
Inter-state 485. 3 "

Great Northern; Intra-state 113.3 miles
Inter-state 411.8 "

Complainants' Exhibits, Exhibit 80, Elliott, N. P.
Complainants' Exhibits, " 53, Ward, G. N.

The figures for length of haul of inter-state are for the total haul of the shipment, from origin to destination, partly within, and partly outside of the state. To segregate that part of an inter-state haul which lies within the state, and use that part only for purposes of comparison, would be error. The mileage made within the state, by an inter-state shipment, is portion of a longer haul, and made at a cost determined by the length of the entire haul; not at a cost of hauls merely the length of the mileage traversed inside the state. For example, while the average total haul on Northern Pacific of inter-state freight entering or leaving Minnesota was 485.3 miles, 185.86 miles of it were performed in the state of Minnesota. The operating cost of these 185.86 miles was not that of a haul only 185.86 miles in length, but was that proportion of the cost for a haul 485.3 miles long, which 185.6 bears to 485.3. This fact, obvious on its face, should not be overlooked; for its consequences run into large figures in the operating expenses of a big railroad.

In the testimony of Mr. James J. Hill, Record, Vol. 3, pp. 1305–1318, G. N.; of Mr. Howard Elliott, Record, Vol. 7, pp. 3121–3151, N. P.; of Mr. Chester J. McPherson, Record, Vol. 3, pp. 1173 1191, G. N.; of Mr. William B. Doddridge, Record, Vol. 3, pp. 1144–1153, G. N.; of Mr. Frank E. Ward, Record, Vol. 3, pp. 1082–1096, G. N.; the numerous elements in the process of transporting freight by railroad, which are directly affected by length of haul, are mentioned in detail. They include substantially all.

The combined effect of the testimony of these five experienced railroad managers and operators is, that the relative cost of short-haul and long-haul traffic is a matter not susceptible of being made the subject of exact accounts, because, to make it so, would require practically every shipment to be followed from origin to destination. Each denies that relative cost for short and long haul can be figured out from any data

kept by the roads. They would place no confidence in figures claimed to have been reached by such a process. They consider that relative cost of the two kinds of traffic must remain a thing to be determined by the judgment of those qualified; that a fairly accurate apportionment as between *average* cost for the two, is practicable through observation and study of the subject, on the ground, by practical operating men, whose duties naturally require them to solve such problems. Each has given the matter study through a long series of years, as a manager and an operating officer of large railway systems; and they are convinced, that the average operating cost of moving the intra-state business carried by these companies in Minnesota, with its short average haul, is fairly from three to five times as much per traffic unit, as the average cost per traffic unit of moving the inter-state traffic touching the state, with its average haul four or five times as long.

That operating cost and relative use of facilities rise rapidly as length of haul shortens, has long been recognized by the generality of those concerned with transportation matters. All tariffs of railway rates are based on the recognition of that principle, whether made by the carriers themselves, or by commissions or legislatures for them. The State of Minnesota recognizes it. All freight tariffs being contested here, are constructed in that way. The rates per unit of traffic, that is, per ton-mile, decrease with the length of haul, or the opposite, as the matter is looked at. The following tables, analyzing the state rates, prove this. In constructing them, the rate per ton-mile allowed for hauls of 105 miles—the average haul of intra-state on Northern Pacific—has been compared with the rate per ton per mile allowed for hauls of 480 and 400 miles, respectively.

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TABLE

SHOWING RELATION BETWEEN RATES PER TON PER MILE, FOR 105 MILES AND 480 MILES, RESPECTIVELY, AS FIXED BY RAILROAD COMMISSION ON CLASSIFIED MERCHANDISE. (SMALL FRACTIONS DISREGARDED.)

Class	Rate per 100 lbs. for 105 ms.	Rate per 100 lbs. for 480 ms.	Rate per ton per m. for 105 ms.	Rate per ton per m. for 480 ms.	Ratio
First	31.6 cts	73.74 cts	6 cts	3 cts	2 to 1
Second	26.33 "	61.45 "	5 "	2.55 "	1.96 to 1
Third	21.06 "	49.15 "	4 "	2 "	2 to 1
Fourth	15.80 "	36.87 "	3 "	1.53 "	1.96 to 1
Fifth	12.64 "	29.50 "	2.4 "	1.23 "	1.95 to 1
Class A	14.22 "	33.18 "	2.66 "	1.38 "	1.93 to 1
Class B	11.06 "	25.8 "	2.10 "	1.70 "	1.96 to 1
Class C	9.48 "	22.12 "	1.8 "	0.91 "	1.97 to 1
Class D	7.9 "	18.44 "	1.5 "	0.75 "	1.97 to 1
Class E	6.32 "	14.75 "	1.2 "	0.61 "	1.97 to 1

TABLE

SHOWING RELATION BETWEEN RATES PER TON PER MILE FOR 105 MILES AND 400 MILES, RESPECTIVELY, AS FIXED BY MINNESOTA COMMODITY LAW. (SMALL FRACTIONS DISREGARDED.)

Class	Rate per 100 lbs. for 105 ms.	Rate per 100 lbs. for 400 ms.	Rate per ton per m. for 105 ms.	Rate per ton per m. for 400 ms.	Ratio.
No. 11	7.9 cts	12. cts	1.5 cts	0.6 cts	2.5 to 1
No. 12	7. "	10.6 "	1.33 "	0.53 "	2.5 to 1
No. 13	9.2 "	13.7 "	1.75 "	0.685 "	2.55 to 1
No. 14	12.2 "	20.7 "	2.32 "	1. "	2.32 to 1
No. 15	13.7 "	23.5 "	2.61 "	1.16 "	2.25 to 1
No. 16	(Ton) 104. "	(Ton) 216. "	1. "	0.54 "	1.85 to 1
No. 17	(Ton) 83. "	(Ton) 172. "	0.8 "	0.43 "	1.86 to 1

TABLE

SHOWING RELATION BETWEEN RATES PER TON PER MILE FOR 105 MILES AND 400 MILES, RESPECTIVELY, AS FIXED BY RAILROAD COMMISSION ON GRAIN, LIVE STOCK, LUMBER AND COAL. (SMALL FRACTIONS DISREGARDED.)

Commodity.	Rate per 100 lbs. for 105 ms.	Rate per 100 lbs. for 400 ms.	Rate per ton per m. for 105 ms.	Rate per ton per m. for 400 ms.	Ratio.
Wheat	7.3 cts.	11. cts.	1.39 cts.	0.55 cts.	2.53 to 1
Coarse Grains	6.4 "	9.7 "	1.21 "	0.485 "	2.49 to 1
Lumber	8.4 "	12.6 "	1.6 "	0.63 "	2.54 to 1
Cattle	11.2 "	19. "	2.13 "	0.90 "	2.35 to 1
Hogs & Sheep	12.6 "	21.4 "	2.4 "	1.07 "	2.24 to 1
Hard Coal	(Ton) 95. "	(Ton) 198. cts.	0.9 "	0.495 "	1.83 to 1
Soft Coal	(Ton) 76. "	(Ton) 158. "	0.724 "	0.395 "	1.83 to 1

If the reason for constructing the state tariffs in this way were not recognition of difference in relative operating cost, and in relative extent of use of property, per unit of traffic, for short haul and for long haul, what could the reason have been?

The chief error in construction of the state's tariffs was not failure to observe a large difference between short haul and long haul. The tariffs themselves amount to such a plain admission of the principle as to render unnecessary other evidence on that subject. What made the state rates confiscatory was that, altogether they are on too low a basis. Commencing at either end, the rate is below a legally or properly compensatory figure.

This is clearly shown by the comparisons between the Company and the State rates made in Exhibits 3 and 5 of the Bill, in Shepard vs. Northern Pacific, Case No. 599, in this Court.

To briefly illustrate, Exhibit 3 compares State and Company merchandise rates between St. Paul and sundry points on Northern Pacific in Minnesota. Under the State tariff, first class is 16.9 cents, St. Paul to Elk River, 39 miles, and 61 cents, St. Paul to East Grand Forks, the most distant point from St. Paul on the Northern Pacific, in the State, 318 miles. This is at the rate of 8.7 cents per ton per mile for the 39 mile haul, and 3.8 cents per ton per mile for the 318 mile haul.

Under the Company's tariffs, first class was 21 cents, St. Paul to Elk River and 67 cents St. Paul to East Grand Forks. This is at the rate of 10.7 cents per ton per mile for the 39 mile haul, and 4.2 cents per ton per mile for the 318 mile haul.

Under the same state tariff, 4th class is 8.4 cents, St. Paul to Elk River, and 30.5 cents, St. Paul to East Grand Forks. This is at the rate of 4.3 cents per ton per mile, for the 39 mile haul, and 1.9 cents per ton per mile for the 318 mile haul.

Under the Company's tariffs, fourth class was 11 cents, St. Paul to Elk River, and 37 cents St. Paul to East Grand

Forks. This is at the rate of 5.6 cents per ton per mile, for the 39 mile haul and 2.3 cents per ton per mile for the 318 mile haul.

Under the same state tariff, class C, which covers car loads, from St. Paul to Elk River is 5.1 cents and from St. Paul to East Grand Forks is 18.3 cents. This is at the rate of 2.6 cents per ton per mile for the 39 mile haul and 1.2 cents per ton per mile for the 318 mile haul.

Under the Company's tariffs, class C was 6 cents, St. Paul to Elk River, and 20 cents, St. Paul to East Grand Forks. This is at the rate of 3 cents per ton per mile for the 39 mile haul and 1.3 cents per ton per mile for the 318 mile haul.

Exhibit 5 compares the state commodity rates, which are all upon a distance basis, with the Company's terminal rates for like distances.

On coarse grain, the state tariff allows, for 5 miles, 2.7 cents, which is at the rate of 10.8 cents per ton per mile; for 100 miles, 7 cents, which is at the rate of 1.4 cents per ton per mile; for 200 miles, 8.4 cents, which is at the rate of 8.4 mills per ton per mile; for 310 miles, the longest distance on Northern Pacific to which the state commodity tariff could apply, 9.7 cents, which is at the rate of 6.3 mills, per ton per mile.

On the same commodity the Company's terminal tariffs charge, for 5 miles, 3.5 cents which is at the rate of 14 cents per ton per mile; for 100 miles, 7.5 cents, which is at the rate of 1.5 cents per ton per mile; for 200 miles, 10 cents, which is at the rate of 10 mills per ton per mile; for 310 miles, 11 cents, which is at the rate of 7.1 mills per ton per mile.

On hogs, the state tariff allows, for 5 miles, 4.9 cents, which is at the rate of 19.6 cents per ton per mile; for 100 miles, 13.5 cents, which is at the rate of 2.7 cents per ton per mile; for 200 miles, 18.4 cents, which is at the rate of 1.84 cents per ton per mile; for 310 miles, 21.1 cents, which is at the rate of 1.36 cents per ton per mile.

On the same commodity, the Company's terminal tariffs charge, for 5 miles 5.5 cents, which is at the rate of 24 cents per ton per mile; for 100 miles, 15.75 cents, which is at the rate of 3.15 cents per ton per mile; for 200 miles, 21.5 cents, which is at the rate of 2.15 cents per ton per mile; for 310 miles, 26 cents, which is at the rate of 1.7 cents per ton per mile.

On hard coal, both tariffs are by the ton, instead of by the 100 pounds, the tariff unit for the other articles above mentioned.

The state tariff allows, for 5 miles, 54 cents, which is at the rate of 10.8 cents per ton per mile; for 100 miles, 101 cents, which is at the rate of 1.01 cents per ton per mile; for 200 miles, 144 cents, which is at the rate of 7.2 miles per ton per mile; for 310 miles 194 cents, which is at the rate of 6.3 mills per ton per mile.

On the same commodity, the Company's terminal tariffs charge, for 5 miles, 60 cents, which is at the rate of 12 cents per ton per mile; for 100 miles, 125 cents, which is at the rate of 1.25 cents per ton per mile; for 200 miles 190 cents, which is at the rate of 9.5 mills per ton per mile; for 310 miles, 210 cents, which is at the rate of 6.8 mills per ton per mile.

The comparisons made by these Exhibits show how faithfully the policy declared by the legislative joint resolution of the 1905 session, viz, that the readjusted rates should be substantial reductions from those existing, was followed in the work of the commission, and in that of the legislature of 1907.

The planing-down process took a cut from about every rate on the tariffs of the roads, although shallower in some instances than in the generality. The action corresponded to the clear intent of the state authorities, viz, to largely cut the rates, as well as to prescribe uniformity for like distances on all the roads.

Therefore, even conceding the rate of progression to

be not far from correct, as applied to distances within the state; with a too low beginning, the intermediate rates must likewise be improper and insufficient.

A correctly made and lawful tariff of rates begins with a compensatory rate, and, progressing on a correct standard, is correct to the end.

The Relative Value of the Testimony on the Respective Sides.

This is a controversy where the ultimate basis of some part of the controlling proofs is the judgment of men. Such dominant questions as values of property, proper divisions of operating expense between freight and passenger service, and relative cost of short-haul and long-haul transportation, cannot be solved except by calling in the aid of men's judgment. Those questions make up about all there is in this litigation, over which there is much dispute. Hence, the quality and the quantity of the judgments proffered on the respective sides, become of large importance.

On the state's side, the three chief witnesses, the Engineer, Mr. Morgan, the accountant, Mr. Hillman, the railroad commissioner, Mr. Staples, were all in state employ; the former two having been engaged for the special purpose of preparing the matters of fact to be used by the state railway commission in the effort to secure reductions of rates on the railways of the state.

On the other hand, several of the witnesses called for complainants were officers of the railroads. A majority of those called by complainants on land values were not employes of any railroad. Two called by complainants on the subject of construction cost, Messrs. Stevens and Berry, were not in employ of any company contesting these rates. The same is true

of two other witnesses, called upon the subject of relative operating cost, Messrs. McPherson and Doddridge.

It should not be said of the opinion of any witness on the hearings of these cases, that he has in any way been influenced by his employment or by his business or official relations.

It is, however, both legitimate and proper to regard the means of knowledge, that is, the especial experience of the witnesses on the respective sides, and the numbers of those concurring in a general way in the opinions advanced.

It is no reflection upon the witnesses for the state, to say what is so manifest, namely, that the opportunities of the witnesses for complainants to observe and to study the things forming the subjects here investigated, have been incomparably more extensive than their own.

Railroad property would be of small value if men's judgment could not be invoked by its owners in defence of its enjoyment, in cases where, like these, from their nature, proofs necessary to be made must include that element.

By consent of the state, these railways have passed from mere local roads into parts of great interstate and national highways. That portion of their total business within the state, regulation of which is under jurisdiction of the state, is a minor fraction of the whole; but it is, and from the nature of things must be, so intermingled with the major fraction beyond state control, that distinct accounts of the two kinds are practically impossible. Nevertheless, there does exist a real cost for the doing of the intra-state business, and there is a real proportion of the total facilities within the state of which use must be made for its transportation. To determine the rights of the state, and of the companies, this cost and this proportion of total facilities used must be ascertained, with the degree of precision which the nature of the subject permits; but to require any greater would, in effect, be to confer upon the state unlimited power over all rates on intra-state

traffic; to say that the railroads have property rights, but are without means for their enforcement.

If the State were here trying to take these railroads outright, would not their values be determined mainly by the judgment of expert witnesses?

Is not a large element of the proofs in every expropriation proceeding of that character?

What is rate regulation by government, but a form of taking for the public use?

Why should proofs of a kind admittedly competent in proceedings for taking the property as a whole be less so in those for taking the same property by piecemeal?

Besides, if the best evidence possible under the nature of the inquiry here, has still left some essential quantities in the class of approximations, the breadth of the margin between the return to which the companies are entitled, and that which would result from application of the state rates to the business, as found by the Master, must always be kept in mind.

Undoubtedly the extent of this margin would be more than enough to take care of the effect of any lack of precison in the figures submitted by the companies. Errors would need to be important and large, to absorb the whole of such a margin.

The three orders of the railway commission, and the two acts of legislature, figuring in this controversy, must be regarded as mere steps in one general campaign, opening with the joint legislative resolution of 1905, for a reduction of the entire body of intra-State rates.

Hence in considering their effect on the revenues and therefore upon the property rights of the Companies, it is correct and fair to treat the series as an entirety, and to judge it as if all had been contained in a single order or enactment. The question here is not merely the separate effect of each order or enactment but the combined and cumulative effect of all.

The Master found the combined effect of the series to be as follows :—

Northern Pacific :

Total Business Intra-State.

Income applicable to valuation	$ 553,568.86
Valuation	19,027,619.00
Annual Return	2.909%

Great Northern :

Total Business Intra-State.

Income applicable to valuation	$ 1,030,862.18
Valuation	30,685,833.00
Annual Return	3.359%

Master's Report Subd. XVII. Inserted Tables.

If therefore, seven per cent. be a fair rate of return upon that portion of the properties of these companies employed in the intra-State business of Minnesota, errors in estimating values, expenses, and net earnings could approach one-half, and still leave room for a true assertion that the series of state orders and enactments would deprive the companies of net earnings which they have a right beyond state interference to collect, if the operation on their business of commercial conditions shall permit.

W. P. Clough.

Supreme Court of the United States

OCTOBER TERM, 1911.

GEORGE T. SIMPSON, et al.,
Appellants,
vs.
DAVID C. SHEPARD,
No. 291.

GEORGE T. SIMPSON, et al.,
Appellants,
vs.
EMMA B. KENNEDY, Executrix, et al.,
GEORGE T. SIMPSON, et al.,
Appellants,
vs.
HENRY A. JAMES,
Consolidated
No. 292.

GEORGE T. SIMPSON, et al.,
Appellants,
vs.
WILLIAM HELLARER,
No. 296.

APPELLEES' BRIEF.

HALE HOLDEN,
PIERCE BUTLER,
JARED HOW,
WILLIAM D. [illegible],
Solicitors for Appellees.

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Supreme Court of the United States

OCTOBER TERM, 1911.

GEORGE T. SIMPSON, et al.,
Appellants,
vs.
DAVID C. SHEPARD,
No. 599

GEORGE T. SIMPSON, et al.,
Appellants,
vs.
EMMA B. KENNEDY, Executrix, et al.,
GEORGE T. SIMPSON, et al.,
Appellants,
vs.
HENRY A. JAMES,
Consolidated No. 600

GEORGE T. SIMPSON, et al.,
Appellants,
vs.
WILLIAM SHILLABER,
No. 601

APPELLEES' BRIEF.

This brief is in support of that part of the decree appealed from which adjudges that the laws and orders complained of are void because they prescribe confiscatory rates in violation of the Fourteenth Amendment of the Constitution of the United States. A separate brief has been filed by appellees in support of that part of the decree which adjudges that the laws and orders complained of are void because in violation of the Commerce Clause of the Constitution.

PRELIMINARY.

This brief in principal part was written before we received the appellants' brief herein. Their statement of facts and references to the proof are partial and unfair to such an extent as to be very misleading, but inasmuch as we have undertaken to point out by this brief, not only that the findings are supported by the proof, but also the precise details of the methods adopted by the Master and the specific evidence on each essential point with as much particularity as if the cases were here for trial *de novo,* it seems to us to be unnecessary to consider in detail appellants' numerous erroneous and incomplete statements of fact and unjustified assumptions in argument, made, doubtless, through zeal in advocacy.

A complete "index" is printed at the end hereof, by means of which the court may readily find our discussion of any point and be guided to the evidence in the record in relation thereto.

We have also printed for convenient reference a separate volume,—the Master's Report to the Circuit Court, Annotated by References to the Testimony and Exhibits, which will be furnished to appellants' solicitors and filed herewith. It is hoped that by its use the court may be enabled readily to find the testimony and exhibits bearing upon every point covered by the findings. An examination of that volume will satisfy the court, we think, that every matter involved in these cases was carefully considered and is covered by clearly expressed findings of the Master.

The proof, which we have undertaken to cite with accuracy and completeness, is, we contend, *more than*

sufficient to sustain the findings and conclusions of the Master; indeed, as is hereinafter shown, the findings,—especially those determining property value, its apportionment to the different classes of intra-state business, the cost of doing intra-state business, the net return therefrom and the rate of return to which these railway companies are entitled,—were more favorable to the appellants than was warranted by the evidence.

STATEMENT OF THE CASE.

The Decrees Appealed From.

These are appeals by certain Defendants below, George T. Simpson, who is Attorney-General of Minnesota, and Ira B. Mills, and Charles F. Staples, and Charles E. Elmquist, who constitute the Railroad and Warehouse Commission of Minnesota, from final decrees of the Circuit Court of Minnesota, adjudging certain laws of the State and orders of the Commission, prescribing railroad rates and fares, to be unconstitutional and void, on the grounds:

(a) that the same operate as a burden upon and interference with, a regulation of, and unjust discrimination against commerce between the States, conducted and carried on, over and upon the lines of the Railway Company, defendant in each case, and

(b) that the said Acts and Orders are and each of them is confiscatory and constitute an attempt to deprive each of the respective complainants and railway companies of their property without due process of law, and to deny them the equal protection of the law, and to impose upon each of said railway companies and its officers, agents and employes, unjust, severe and grossly excessive fines and penalties, amounting to a denial of the equal protection of the law; and therefore each of them is in violation of the Constitution of the United States, and void and of no effect.

Defendants are by the decrees restrained and enjoined from any attempt to enforce the Laws or Orders, or either of them or the penalties for the violation thereof.

Complainant in each case is awarded judgment for costs to be taxed against the appellants.

Minnesota Railroad and Warehouse Commission.

The Railroad and Warehouse Commission of Minnesota was created by the Legislature of Minnesota and its powers, so far as here principally material, are as set forth in Sections 1969 and 1970 of the Revised Laws of Minnesota of 1905.

By Section 1969 it is in substance provided that upon the verified complaint that any tariff of rates, fares or charges, or any part thereof, or any classification is unequal or unreasonable, the Commission shall investigate the matter alleged, and if upon the hearing such tariff of rates, fares or charges, or any part thereof, or of such classification is found to be unreasonable, the Commission shall make an order stating wherein the same are so unequal or unreasonable and shall make a tariff of rates, fares, charges and classification which shall be substituted for the tariff so complained of. The tariff so made by the Commission shall be deemed *prima facie* reasonable in all courts, and shall be in full force during the pendency of any appeal or other proceedings to review the action of the Commission in establishing the same.

By Section 1970, it is in substance provided that the Commission shall also, of its own motion, investigate any matter relating to the reasonableness of any rates, fares, charges or classifications, whenever, in its judgment, the public interests require it, and in such case the procedure shall be, as nearly as may be, as provided upon the filing of a complaint, and the findings and order in such case shall have the same effect as those made upon Complaint. (Master's Rep. Vol. 1 N. P. 187.)

Subjects Investigated by the Commission Prior to 1906.

Prior to the making of the order of Sept 6th, 1906, the Commission had never undertaken to prescribe general schedules or tariffs covering all articles and commodities, but had been diligent in the supervision and regulation of the methods of business of the carriers, with reference to furnishing cars, adjusting minimum carload weights, equalizing so far as practicable the rates between different localities and different shippers, so as to prevent unjust discrimination between such localities and individual shippers in the same localities, adjusting classifications, securing reasonable rates and switching charges in particular cases and entertaining and determining the complaints of shippers against carriers, most of which—possibly 95% thereof —were adjusted by concessions and compromises, without investigation or order. (Master's Rep. Vol. 1 N. P. pages 188 and 189). (Staples, page 2609, Vol. 6 N. P. Case.)

With reference to the matter of rates, complaints were almost invariably based on two claims, either that somebody in the same or in a nearby town was getting a better rate or that the rate to some particular town was unreasonably high as compared with the rate to some other town or on some other line of road, with reference to the mileage, and such complaints were usually confined to some particular commodity. (Staples p. 2610 Vol. 6 N. P. Case: see also Staples pp. 2763, 2766 and 2772).

Alleged discrimination between localities and shippers, not *excessive rates*, was, with respect to tariffs, substantially the only ground of complaint—

(Master's Rep. Vol. 1 N. P. p. 189). Through the interposition of the State Commission adjustments of rates on grain, lumber and live stock on all railroads were secured.

Later herein we shall show that the rates, both freight and passenger covering the Minnesota intrastate traffic, which were in force prior to the reductions complained of, were not excessive nor unreasonably high; that they were fair when compared with rates covering the corresponding interstate business in and touching Minnesota; that they were relatively low when compared with other railroad rates covering business done under like circumstances and conditions in the same general territory; that substantial and large reductions of rates—freight and passenger—had voluntarily been made from time to time over a long period of years and down to the reductions complained of, and that, as a matter of fact, the rates existing immediately before such reductions—whether measured by the value of the service to the public, or by the cost thereof to the carrier rendering it—were so low, that neither Minnesota intrastate freight business nor interstate business ever yielded a fair or reasonable return over and above the cost of doing such business and taxes chargeable thereto.

During the 1905 Legislative Session in Minnesota a joint resolution of the House and Senate was passed, approved April 4th, 1905, (Session Laws of 1905 Chapter 350), directing the Railroad and Warehouse Commission "to undertake the work of securing a readjustment of the existing freight rates in this State, which will give a more uniform system of rates throughout the State and a uniform scale of percent-

ages which each class rate shall bear to the first class, the readjustment to secure *a substantial reduction* in the existing merchandise rates."

At the same time funds were provided to enable the Commission to secure a physical valuation of all the railroad properties within the State.

By Chapter 176 of the Laws of Minnesota for the year 1905, railway companies within the State were prohibited from *changing* any state rate, except upon application to the Commission and its consent to the change.

In January 1906, the Commission commenced the work of ascertaining the physical valuation of the railways of Minnesota, but this work was not completed until late in the year 1908—long after these suits were instituted, and the taking of testimony had commenced (See State Engineer Morgan's testimony, Vol. 5 N. P. Case, p. 1765, et seq.), and the Commission appears to have been wholly without any data or information upon which to form any estimate of value of any of the railway properties in the State. (Record Vol. 5 N. P. pp. 1972-3).

Reductions of Freight Rates and Passenger Fares in Minnesota Prior to 1906.

In 1871 the rates charged by different roads in the State varied from 1¼ cents per ton per mile to 5 1-3 cents, while the rate charged from Chicago to the eastern market was 1.35 cents per ton per mile, and the general cost, as estimated by Poor, the railroad statistician, was 1¼ cents. (See p. 21, Twentieth Annual Report of the Railroad & Warehouse Commission of Minnesota for year ending November 30th, 1904).

In 1904 the receipts per ton per mile for the entire lines of the companies here involved were, Northern Pacific 0.880 cents, Great Northern 0.889, Minneapolis & St. Louis 1.217 cents (Ibid p. 121). The fact that the average haul on the lines of the Minneapolis & St. Louis Company is much shorter than on the lines of the other companies is a reason why the average receipts per ton per mile were higher. The average receipts per passenger per mile in 1904 for the entire lines of the companies herein involved were, Northern Pacific 2.20 cents, Great Northern 2.35 cents, Minneapolis & St. Louis 1.94 cents (Ibid. p. 119). The above mentioned report said "Equal rates have been established on all lines of railroad, and substantial reductions in freight and passenger rates have been secured from time to time, as warranted by the constantly increasing business of the railroads and the needs of the people. It is but fair to add that many of the railroad companies have made voluntary reductions in their rates, while others have met the demands of the State Commission cheerfully and promptly, recognizing their justice and equity."

"Since 1885, the Commission has reduced the passenger rates in this State from 5 to 3 cents per mile. It has also reduced the rates on lumber, coal, grain, livestock and merchandise. To afford an idea and comparison of rates now in force as against those which formerly applied, attention is directed to the following table:" (Ibid. p. 21).

The table referred to is a statement showing comparison of merchandise and commodity rates for the years *1887* and *1904* between St. Paul and certain representative stations on various lines of the Great

Northern Railway Company and the Chicago, Milwaukee & St. Paul Railway Company in Minnesota. The merchandise rates referred to include classes, 1, 2, 3, 4, 5, "A," "B," "C," "D" and "E." The commodity rates referred to include rates on lumber, coal, grain, (flax, wheat, coarse grain), livestock (cattle, hogs, sheep).

So much of the table as relates to the Great Northern Company, omitting all of the merchandise rates, except those on First Class, which is believed to be fairly representative of the other nine classes, is here reproduced; to which we add the distance between St. Paul and the stations named and the percentage of reduction.

In the Annual Report dated December 30, 1903, the Commission reported that no reduction of existing passenger fares was justified.

In 1903 the legislature directed the Commission to "inquire into the reasonableness of the passenger rates now in force over all of the railroads in the State of Minnesota, with a view to their reduction to a basis of not less than two cents, nor more than two and one-half cents per mile, first class, and also looking toward the establishment of a cheaper second class passenger rate in Minnesota, to make such order as the facts in the case may warrant and to report to the next Session of the Legislature the result of their investigation, together with a copy of any order they may make as a result thereof." (See page 15, Nineteenth Annual Report of the Railroad and Warehouse Commission of Minnesota to the Governor for the year ending November 30th, 1903).

Statement Showing Comparison of Merchandise and Commodity Rates for the Years 1887 and 1904.

GREAT NORTHERN RAILWAY COMPANY.

BETWEEN ST. PAUL AND	Mileage	Year	CLASSIFICATION																	
			GRAIN												LIVE STOCK					
			First Class	Reduced Per Cent	Lumber	Reduced Per Cent	Coal	Reduced Per Cent	Flax	Reduced Per Cent	Wheat	Reduced Per Cent	Coarse Grain	Reduced Per Cent	Cattle	Reduced Per Cent	Hogs	Reduced Per Cent	Sheep	Reduced Per Cent
St. Cloud	75	1887	.40		.08½		2.00		.09½		.09½		.09½		22.50		22.50		22.50	
		1904	.34	15.	.07	17.64	1.50	25.	.08	15.78	.08	15.8	.08	15.8	20.43	9.2	19.75	12.2	20.43	9.2
Willmar	102	1887	.45		.11		2.20		.11		.11		.11		25.50		25.50		25.50	
		1904	.40	11.1	.09½	13.63	1.95	11.36	.09	18.18	.09	18.2	.09	18.2	22.80	10.6	21.00	17.6	22.80	10.6
Sauk Center	117	1887	.49		.12		2.05		.12		.12		.12		27.00		27.00		27.00	
		1904	.43	12.24	.10	16.66	1.80	12.19	.09½	20.83	.09½	20.8	.09½	20.8	24.70	8.5	24.75	8.3	24.70	8.5
Fergus Falls	187	1887	.66		.15½		2.45		.16½		.16½		.16½		34.00		34.00		34.00	
		1904	.56	15.15	.13	16.12	2.00	18.36	.11½	30.30	.11½	30.3	.11½	30.3	30.88	9.2	30.75	9.6	30.88	9.2
Crookston	299	1887	.88		.21		3.25		.21		.21		.21		42.00		42.00		42.00	
		1904	.67	23.76	.15½	26.19	2.10	35.38	.14	33.33	.14	33.3	.14	33.3	38.00	9.5	37.88	9.8	38.00	9.5
St. Vincent	390	1887	1.10		.25		4.00		.23		.23		.23		49.00		49.00		49.00	
		1904	.91	17.27	.21	16.	2.25	43.75	.15	34.78	.15	34.8	.15	34.8	44.65	8.9	44.63	8.9	44.65	8.9
Moorhead	241	1887	.80		.18½		3.00		.20		.20		.20		39.00		39.00		39.00	
		1904	.67	16.25	.15½	16.21	2.10	30.	.14	30.	.14	30.	.14	30.	35.63	8.6	36.25	7.	35.63	8.6
Hinckley	88	1887	.45		.10½				.10		.10		.10		25.00		25.00		25.00	
		1904	.35	22.22	.05	52.37	1.25		.07½	25.	.07½	25.	.07½	25.	20.00	20.	19.50	22.	14.75	41.
Morris	157	1887	.56		.14		2.40		.13½		.13½		.13½		31.00		31.00		31.00	
		1904	.50	10.71	.11	21.42	2.05	14.58	.10½	22.22	.10½	22.2	.10½	22.2	27.82	10.2	27.16	12.4	27.82	10.2
Breckenridge	214	1887	.72		.17		2.75		.18		.18		.18		37.00		37.00		37.00	
		1904	.61	15.27	.14½	14.11	2.10	23.63	.12½	30.55	.12½	30.6	.12½	30.6	33.73	8.8	33.00	10.8	33.73	8.8

(Note.)—Rates are in cents per hundred pounds, with the following exceptions: (1)—All coal rates are in dollars per ton, (2)—Great Northern livestock rates are in dollars per car. (See pages 22 & 23, Ibid.)

The distances above indicated in parenthesis are not shown upon the table, but were taken from the published distance tables of the Company. The percentages of reductions were not included in the table, but have been calculated by us and added to the tables as published in the report.

The Commission did investigate the existing passenger fares, and after public hearing made a full report in which it concluded that at that time there would not be warrant for a reduction from the three cent maximum rate (See testimony of Commissioner Staples p. 2774, 2775, 2777 Record, Vol. 6 N. P. Case.) and it appears that the Commission continued in the opinion that the passenger fares were low enough, because, as testified to by defendant Staples, in December 1906, four or five months before the Legislature reduced the fares from 3 cents to 2 cents per mile, "the Commission had no intention at that time, of undertaking to make a reduction in the passenger rates." (Staples N. P. Vol. 6 p. 2776).

It is worthy of note that at the trials of these cases Commissioner Staples who testified at great length, expressed no opinion that the reduced fares were reasonable.

It is right to conclude that the Commission itself is of opinion that fares of 2 cents per mile are too low.

There were then as now three members of the Commission; they were Ira B. Mills and C. F. Staples, two of the appellants herein, and J. G. Miller, whose term of office expired before the making of the rates complained of in these suits. The investigation was thoroughly made and the Commission reported unanimously, under date of December 30th, 1903, (a little more than three years before the passage of Chapter 97 of the Laws of 1907,) against a two cent passenger fare law, as follows:

"By comparing the statements herewith submitted to your Honorable Body, taking into consideration the density of the population, the earning capacity of each

road coupled with the enormous volume of passenger traffic in the eastern and other states as compared with the western states through which Minnesota railroads run, the costly equipment which competitive conditions have brought about in our State, the still further demands for better passenger service in outlying districts, the reduced rates by means of mileage books and interchangeable mileage, excursion rates and commutation tickets for suburban traffic, which our people enjoy, the rates for which are 2½ cents and under, the Commission is of the opinion *that a maximum rate of three cents per passenger per mile is not unreasonable when compared with rates prevailing in other states, and do not at the present time recommend any further reduction from the maximum rate at present charged by the respective companies doing business in this state.*" (See pp. 15-24 Nineteenth Annual Report).

The statements incorporated in such report show the population, area, railway mileage, population per square mile, and population per mile of road in 28 other States compared with the same in Minnesota, from which it appeared to the Commission "that Minnesota is very low down on the list as compared with other states, which appears to the Commission to be an important factor in determining this question." (page 18).

The States included in the table for purposes of comparison are: Alabama, Arkansas, California, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Missouri, Mississippi, New Hampshire, New York, North Carolina, Ohio, Pennsylvania, Rhode

Island, South Carolina, Texas, Vermont, Virginia, Wisconsin and Minnesota.

The table shows that the population per square mile in Minnesota is 21.8. The average population per square mile of the 29 States named calculated from the table is 37.5. There are only five States having a less population per square mile; they are Colorado having 5.2, Florida 9, Kansas 17.9, Maine 21 and Texas 11.5.

The table shows that Minnesota had 247.6 population per railroad mile. The average population of the 29 States per mile of railroad has also been calculated from the table and is 413.1.

Only four of said States, Colorado, Florida, Iowa and Kansas have less population per mile of railroad than Minnesota.

Statement "D" incorporated in the report "shows the maximum passenger rates per mile prescribed by law in the various states, together with those made by railroad companies and approved by Railroad Commissioners, an examination of which will show that *only in one or two cases are the prescribed rates less than three cents per mile, and in those cases only applies to certain systems and not to states* but the actual earnings as shown on Statement B (another table included in the report) are much less." (Ibid. p. 18 and 19). It appears from statement "B," referred to, that the passenger earnings per passenger mile on the lines of the Northern Pacific Company were 2.272 cents, on the lines of the Great Northern Company 2.219 cents, on the lines of the Minneapolis & St. Louis Company 2.016 cents. Indeed it is generally true that, by reason of the transportation of children, clergymen,

etc., at one-half fare, competition of longer lines with shorter lines between the same points, party rates, commutation rates, excursions, etc., average earnings per passenger mile are substantially less than the maximum fare.

A law of Pennsylvania of 1907 fixed passenger fares at 2 cents per mile. In a suit brought by the Pennsylvania Railroad Company the Supreme Court of the State held the law was void, because the fares were too low. *Pennsylvania Railroad Company v. Philadelphia County*, 220 Pa. St. 100: 68 Atl. 676. The Minnesota Commission's Report referred to, shows that the population of Pennsylvania per square mile was *139.4* against that of Minnesota of *21.8*, and population per mile of railroad 601.4 against that of Minnesota of 247.6.

There have been judicial determinations that such fares are too low in Missouri, Arkansas, Oklahoma, as well as in these cases.

See *St. L. & S. F. Railway Co. v. Hadley* 168 Federal, 317.
In re *Arkansas Railroad Rates*, 163 Federal 141; same case 187 Fed. 290.
M. K. & T. Railway v. Love, 174 Fed. 59, s. c. 177 Fed. 493 and s. c. under title of *Love v. A. T. & S. F. Ry. Co.*, 185 Fed. p. 321.
Shepherd v. Simpson, 184 Federal, 765.

As far as we know there never has been a judicial determination that 2 cents per passenger mile is not too low.

Voluntary Reductions, September 1, 1906, of Rates on Grain and Coal by Northern Pacific, Great Northern and Minneapolis, St. Paul & Sault Ste. Marie Companies.

At the same time that the Commission was considering the schedule afterwards incorporated in its Order of September 6th, 1906, it was also considering a reduction in the rates for transportation within the State of certain commodities, grain, coal, livestock and lumber, in carload lots. Because of the agitation with regard to commodity rates (Maguire, page 800 Vol. 3 G. N.) the three northern systems in the state, the Great Northern, the Northern Pacific and the Minneapolis, St. Paul and Sault Ste. Marie Companies voluntarily reduced their rates on grain and coal approximately 10%.

These reductions made it necessary, in order to avoid discrimination, for these companies to reduce their corresponding interstate rates (see Exhibits 40 Maguire, 43 Maguire, 44 Maguire, 6 G. N. Case, and his testimony, 3 G. N. 800-820). They also compelled very substantial reductions of intrastate and interstate rates on the lines of their competitors. (See Ex. 14 A. Tittemore, Vol. 6 Minneapolis & St. Louis case and his testimony in explanation thereof; Vol. 3 M. & St. L. 847, et seq).

It will be shown hereafter, that while rates and fares have been decreasing substantially, prices of supplies and labor required to carry on the railroad business, and taxes paid by the Companies have greatly increased.

Rates Complained of—How Made—Commission's Order of September 6th, 1906.

The rates prescribed by the Commission in its Order of Sept. 6th, 1906, were made because of the Legislative Resolution above quoted.

It determined by a separate order as to each company, that the terminal and distance freight rates on merchandise, charged by each railway company, on classes 1, 2, 3, 4, 5, "A," "B," "C," "D" and "E" (as shown by the "Western Classification") between stations in Minnesota were unreasonable. It further determined that the rates on such classes embraced in the Order (according to the Western Classification with exceptions and changes made by the Minnesota Commission) are reasonable *maximum* rates between *stations* on each company's line in Minnesota, and what are known as *terminal* or *distributing stations* on such railway in said State, and that rates 5 per cent higher than the rates shown in the schedule are reasonable *maximum rates* between stations on the line of railway of the Company in said state, neither of which is a *terminal* or *distributing* station. It ordered that the existing rates be reduced and fixed as shown in said Order and forbade the companies to charge any higher rates than those named therein. (See Ex. 1, attached to Amended Bill of Complaint; Vol. 1 N. P. 143).

The Western Classification.

In the Western Classification all articles of property which are the subject of transportation, are classified and arranged in groups with reference to the general character thereof—weight, bulk, perishable nature, value, and the cost of, and risk attending the transpor-

tation thereof. It contains ten classes namely, Classes 1, 2, 3, 4. 5, "A," "B," "C," "D" and "E." It appears from the Classification that each such class takes a different rate and includes a very large number of articles. In addition to the rate prescribed for each class there are other rates which are fractional parts, or multiples, of the rate prescribed for certain of the classes.

There are at least twenty-two different rates for each distance, namely a rate for each of the ten classes and *also* rates designated as,

½ of "A."
½ of 1st Class.
1½ times 1st Class.
2 times 1st Class.
2½ times 1st Class.
3 times 1st Class.
3½ times 1st Class.
4½ times 1st Class.
½ of 2nd Class.
½ of 3rd Class.
½ of 4th Class.
½ of 1½ times 1st Class.

(See Complainant's Ex. 21 Tittemore Vol. 6 M. & St. L.)

The first four classes apply to less than carload lots, the so-called "L. C. L." rates; and the other six classes apply to carload lots, the so-called "C. L." rates. This Classification had long been in effect in the West and Northwest and in Minnesota, subject to the modifications referred to. The rates included in the classification and the schedule attached to the order of Sept. 6th, 1906, are in the record called "Class Rates" or "Merchandise Rates." In Minnesota several hundred different commodities have been removed from the Western Classification by applying to them *lower* rates

than those prescribed in the classification. They cover many of the principal articles of commerce in Minnesota, such as grain, livestock, coal, lumber and other products of the soil, mines and forests.

The Principle on Which the Schedule Was Made.

The schedule of rates set forth in the Order of Sept. 6, 1906, is such that each rate for each class for any distance bears such an exact relation to each other rate, that, given a single rate for any class for a stated distance, any other rate can be ascertained by mathematical calculation and without reference to the schedule itself. The plan of the schedule is this:

For first class merchandise an allowance of 11.02 cents per cwt. is made for terminal charges, and for each five miles or fraction thereof up to 200 miles, .98 of a cent for hauling charge; so that for a distance of five miles the rate is 12 cents per cwt., for a distance of ten miles the rate is 12.98 cents per cwt., and for a distance of 200 miles the rate is 50.22 cents per cwt. After a distance of 200 miles is reached .98 of a cent is allowed per cwt., as a hauling charge for each 10 miles or fraction thereof up to 400 miles; so that the rate for 200 miles being 50.22 cents per cwt., the rate for 210 miles is 51.20 cents, for 220 miles the rate is 52.18 cents and for 400 miles the rate is 69.82 cents per cwt. After a distance of 400 miles is reached, .98 of a cent is allowed as a hauling charge per cwt., for each 20 miles or fraction thereof up to 500 miles; so that the rate for 400 miles being 69.82 cents per cwt., the rate for 420 miles is 70.80 cents, and the rate for 500 miles is 74.72 cents per cwt.

The rates for classes other than the first class are a fixed per centum of the corresponding rates for the first class, those for the second class being 83 1-3%, for the third class being 66 2-3%, for the fourth class being 50%, for the fifth class being 40%, for class A being 45%, for class B being 35%, for class C being 30%, for class D being 25% and for class E being 20%.

The Schedule—How Extended to Distances Greater Than 500 Miles.

The rates on any class may be extended to any distance beyond 500 miles by simply applying the principle upon which the schedule was made and adding for each 20 miles (or fraction thereof) of added distance, the allowance made by the Commission's Schedule, i. e., .98 cents for class 1, 83 1-3% of .98 cents for class 2, 66 2-3% of .98 cents for class 3, and so on.

Taking the basis of the schedule and applying the principle upon which it was made, the rates produced for a distance of 600 miles are the following:

Class 1, 79.62 cents; Class 2, 66.35 cents; Class 3, 53.08 cents; Class 4, 39.81 cents; Fifth Class, 31.84 cents; Class A, 35.83 cents; Class B, 27.87 cents; Class C, 23.88 cents; Class D. 19.90 cents; Class E, 15.92 cents. (See Ex. 22, Tittemore, Vol. 6 Minneapolis & St. Louis Case).

Differences in Conditions Disregarded by the Commission.

Notwithstanding the widest difference between them in earnings, volume and character of traffic and oper-

ating cost compared with earnings, the same rates were prescribed for practically all the railroads in the State.

(See Staples' testimony, N. P. Vol. 6 p. 2726, et seq.)

The order of September 6th, 1906, became a part of general and sweeping reductions of practically all freight and passenger rates.

It was the purpose of the Commission—not alone to establish a rigid percentage relation as between rates for the different classes and to equalize rates on a distance basis—but also to make a sweeping reduction in the rates. This reduction was from 20% to 25% (Staples' testimony Vol. 6 N. P. 2740). It was the first of a series of reductions made within six or seven months, covering practically all freight rates and passenger fares. It was provided in the Order: "This order does not prevent the charging of a lower rate than that provided by Exhibit 'A,' but in case a less rate is charged on one class, all classes must be reduced so as to preserve the relative relations between classes fixed in Exhibit 'A.'" By Section 7 of Chapter 232, the Commodity Rate Act, it is provided "If at the time of the taking effect of this act any railroad is maintaining a rate between any two stations in this state that is *less than* the rate herein prescribed for the same distance, this act shall not be construed as authorizing the raising of such rate." (Ex. 4 to Amended Bill of Complaint, Vol. 1 N. P. pp. 153: 156.) This prohibited one means of equalizing rates.

Commission's Order, May 3rd, 1907.

Prior to the taking effect of the Order of September 6th, 1906, the various railway companies in the State had maintained carload inrates from St. Paul, Minneapolis and Duluth to various "distributing stations" in the State for the purpose of supplying wholesale distributing houses. In its Order of Sept. 6, 1906, the Commission provided; "In case the Railway Company, in putting in a new schedule of rates, fails to so adjust the 'in' rates as to protect the jobbers at the distributing stations other than St. Paul, Minneapolis and Duluth, the Commission will undertake to make the necessary adjustments." Apparently the railway companies did not adjust these in-rates to the satisfaction of the Commission and by its Order to each company under date May 3rd, 1907, effective June 3rd, 1907, the Commission prescribed certain maximum carload rates from St. Paul, Minneapolis, Minnesota Transfer and Duluth to various designated distributing points and covering various designated commodities. (Staples, Vol. 6 N. P. page 2754; Ex. 2, attached to Amended and Supplemental Bill of Complaint, Vol. 1, N. P. p. 149.) Exhibit 69—Staples Vol. 9 N. P., shows that the average reduction in rates covered by the order of the Commission was, on the Northern Pacific Road, 13.577%. This Order of May 3, 1907, was, in a way supplemental to the order of Sept. 6, 1906. It was intended to re-establish the relation of rates theretofore existing between less-than-carload rates from the cities of St. Paul, Minneapolis and Duluth to localities in general within the State on the one hand, and carload rates from these

cities to certain less important distributing stations plus less-than-carload rates out of such last mentioned stations to localities in general in the State on the other hand.

Commission's Order of December 14th, 1906, Enjoined at Suits of Companies and Superseded by Chapter 232, Laws of 1907.

Notwithstanding voluntary reductions above referred to, and the reductions caused by the Order of Sept. 6th, 1906, the Commission under date of December 14, 1906, effective by its terms January 26, 1907, made a second order as to each company, reducing rates for transportation within the state of grain, coal, lumber and livestock. The reduction effected averaged from 10 per cent to 28½ per cent, or a general average of 17.37 per cent, in *addition* to the voluntary reductions in rates on grain and coal made by the three northern systems as above recited. (Staples, Vol. 6 N. P., pages 2740, 2752.)

In January 1907, nine railroad companies affected by this second order, being the same companies who are the defendants in the nine suits, of which these are three, as hereinafter set forth—procured an injunction from the Circuit Court of the United States for the District of Minnesota forbidding the enforcement by the Commission of its second Order.

Commodity Rates Prescribed by Chapter 232, Laws of 1907.

The legislature of the State, which convened early in January, 1907, enacted Chapter 232, General Laws

of Minnesota for the year 1907, approved April 18, 1907, and effective by its terms June 1st, 1907, fixing a new schedule of commodity rates in all respects like the schedule comprehended in the order of the Commission, excepting that the reduction in rates provided by it was 10 per cent less than that provided by the Order. (Staples, pages 2752-3, Vol. 6 N. P.)

This law created seven new classes, numbered respectively from 11 to 17. Wheat and thirteen other articles were placed in class 11, corn and thirty-seven other articles in class 12, lumber and five other articles in Class 13, sheep in double-decked cars and cattle in Class 14, sheep in single-decked cars and hogs in Class 15, hard coal in Class 16, and soft coal in Class 17. There is no fixed percentage relation between these classes and no regular rate of progression of the various rates with increasing distance. In other respects, however, the method of making the schedule is similar to that adopted by the Commission in its Order of Sept. 6th, 1906. The hauling charge comprehended in the rates for each class decreases with increasing distance and becomes very small for the added mileage for distances between 300 and 400 miles, which is the limit of distance covered by the Act. On Class 11 the difference between the rate for 300 miles and that for 400 miles is 1.1 cents per cwt., amounting to 2.2 mills per ton per mile; on Class 12 the difference is one cent per cwt., or 2 mills per ton per mile; on Class 13 it is 2.2 cents per cwt., or 4.4 mills per ton per mile; on Class 14 it is 2.2 cents per cwt. or 4.4 mills per ton per mile; on Class 15 it is 1.5 cents per cwt. or 3 mills per ton per mile; on Class 16 it is 34 cents per ton or 3.4 mills per ton per mile;

and on Class 17 it is 18 cents per ton or 1.8 mills per ton per mile.

These rates extended to distances greater than 400 miles by applying the principle on which they are made, that is, by adding to the rate for each additional ten miles the amount included in the rate for the last ten miles included in the schedule distance are very much lower than the existing long haul rates of the Northern Pacific and Great Northern Companies. When these rates are so extended to the longer hauls of these companies for distances exceeding, say 400 or 500 miles and up to 1900 or 2000 miles, they are so much lower than existing rates for such distances as to be *obviously unreasonable* and confiscatory.

Passenger Rates—Two Cents Per Mile—Chapter 97 of Laws of 1907.

At the same session of the legislature, it passed the so-called two-cents passenger law, being an Act approved April 4, 1907, effective by its terms May 1, 1907, prescribing as maximum rates for the transportation of passengers within the State, two cents per mile for passengers of twelve years of age, or over, together with baggage not exceeding 150 lbs. in weight, and one cent per mile for passengers under twelve years of age, together with baggage not exceeding 75 pounds in weight. The maximum theretofore had been three cents for adult passengers (Staples, page 2774, Vol. 6 N. P.) and the Commission had considered as late, in any event as 1903, that this maximum ought not to be reduced. (Ibid. pages 2908-9).

Summary of Freight and Passenger Rate Reductions Between October 22, 1906 and June 3, 1907.

Summarized, then, the reduction in rates which may be charged by railway companies for transportation within the State of Minnesota, due to the agitation of the years 1905-6-7 are as follows:

(a) Reductions in rates on grain effective Sept. 1, 1906, and coal amounting to 10% effective October 22, 1906.

(b) Reduction in rates on general merchandise amounting to from 20% to 25%, effective November 15, 1906.

(c) Reduction in maximum passenger fares amounting to 33 1-3%, effective May 1, 1907.

(d) Reduction in rates on grain, coal livestock and lumber amounting to 7.377% in addition to the reduction on grain and coal as shown by (a), effective by the terms of the law June 1st, 1907. (These rates cover the same commodities as were covered by the lower rates prescribed by the Commission, effective by the terms of the order January 26, 1907, but which were enjoined at the suit of the railway company as aforesaid.)

(e) Reduction in in-rates to distributing stations amounting to 13.58%, effective May 3, 1907.

(Report of Master (Vol. 1 N. P. p. 190-192 and decision of the Circuit Court, Ibid. p. 394.)

It is clear that it was the purpose of the state authorities to make *sweeping reductions*. It cannot be said that these orders and laws were made and enacted *merely to equalize* rates.

These Suits.

All the reduced rates complained of in these suits were adopted by the railroad companies doing busi-

ness in the State, excepting the commodity rates prescribed by Chapter 232, Gen. Laws Minn. 1907—reducing rates on grain, coal, livestock and lumber. Prior to the time when by the terms of that Act those rates would have become effective, that is to say, in the latter part of May, 1907, stockholders in nine several railroad companies subject to the Acts and Orders, brought suits against the respective railway companies in which they were stockholders, the Attorney General of the State of Minnesota and the Members of the Railroad and Warehouse Commission of the State of Minnesota. In some of these suits various persons doing business in Minnesota were joined as parties defendant in their capacity as representative patrons of the companies with which they were joined as defendants both in the matter of freight and of passenger transportation.

Bills of Complaint.

The Bills of Complaint in these suits, although not wholly alike, complain of the same grievances and seek the same relief. Each avers facts sufficient to confer jurisdiction on the Federal Courts; the promulgation of the Order of Sept. 6, 1906, "Merchandise Rates" and that of May 3rd, 1907, "In Rates" to certain distributing centers,—and the passage of the Act of April 18, 1907 "Commodity Rates," and the Act of April 4, 1907, fixing passenger fares at 2 cents per mile; that the defendant railway company has put into effect the merchandise rates and passenger fares at 2 cents per mile, and threatens to put into effect the commodity rates and the in-rates to dis-

tributing centers (the in-rates were not complained of in the suit against the Minneapolis & St. Louis Railway Company, nor were any patrons of the company made parties defendant).

The grounds upon which relief was prayed were:

(a) that said Acts and Orders are and each of them is unjust, unreasonable and confiscatory.

(b) that each of said Acts and Orders operates directly and necessarily upon and constitutes a burden on and interference with, and a regulation of, and an unjust discrimination against commerce among the States conducted and carried on, over and upon the lines of railway of the defendant railway company and that said Acts and Orders are in violation of the Commerce Clause of the Federal Constitution.

(c) that the Acts and Orders, and the penalties prescribed for their violation, are, and each of them is, so drastic that no owner or operator of railroad property can invoke the jurisdiction of any Court to test the validity thereof, except at the risk of confiscation of such property or imprisonment for long terms, of the officers and employes of the company, or both such confiscation and imprisonment, and that the laws and orders do, and each of them does, deny to the railway company and to the stockholder, complainant, equal protection of the laws, and deprive it and them of property without due process of law and for that reason are unconstitutional and void.

Allegations of complaints are sufficient.

Appellants' contention that the merchandise rates having been voluntarily accepted and adopted by the Companies, stockholders, complainants, can not maintain a suit in equity to compel their abandonment is without merit.

Appellants argue (Brief page 66) that the merchandise rates were adopted without compulsion, and could be changed only in the manner prescribed by Chapter 176, Laws of Minnesota 1905. This chapter is printed as Appendix A to appellants' brief.

An examination of the exceptions filed in the court below fails to disclose any complaint as to this point, but it was made the subject of assignment of error number 23 (Vol. 1 N. P., page 448.)

Chapter 176, Laws of Minnesota 1905, upon which this assignment of error is predicated, contains in section 5 the provisions referred to which authorize and require a carrier desiring to change or discontinue any published rate, etc., to apply to the Commission for authority therefor, giving the reason for such change. Upon application thus made, the section provides for notice and hearing, and action thereon by the Commission. The title of this Act shows that it is wholly limited to freight rates.

The jurisdiction of the court below at the suit of these complaining stockholders was fully considered and upheld in this Court in *Ex Parte Young*, 209 U. S. 123. Under that decision, there can be no doubt of the power of the court below to have proceeded to the entry of a final decree upon the proof adduced before it. It was plainly within that jurisdiction to determine

the issue raised as to the confiscatory character of the rates, and, if found to be of that character, to grant the relief prayed for in the bills of complaint, and issue injunction in manner and form as recited in the final decrees. These decrees (page 432, Vol. 1 N. P.), in so far as the railroad companies or their officers and agents are concerned, commanded them to cease further observance of the tariffs and rates complained of. The decrees went no further; they did not require the railroad companies to return to the schedules in effect before the orders and acts of the Commission and Legislature were passed, neither did they assume to determine what rates should be made effective by the companies, nor what means should be adopted by them for the establishment of other rates in lieu of those enjoined. Appellants argue that before the companies should have installed other rates in lieu of those enjoined, they should have applied for authority to the defendant Commissioners. It is a sufficient answer to this argument to point out that if such a step should have been taken, it should have been taken upon considerations wholly extrinsic to this litigation. The office of the bills of complaint and of the lower court in passing its decree was at an end with the issuance of the injunction against the rates complained of; the court could not, as indeed it did not, assume superintending jurisdiction over the carriers as to their further action, and if Chapter 176 required the carriers to thereupon make application to the Railroad and Warehouse Commission for authority to install other merchandise rates, no order or decree of the court could add to or take away from the requirement of that Act.

The case of *Prentis et al. v. Atlantic Coast Line*, 211 U. S. 210, is cited as authority by the appellants in support of the proposition urged in this regard. It is sufficient to note that in that case the question turned upon the failure of the carriers to take an appeal to the Supreme Court of Appeals of Virginia, which court, under particular constitutional provisions, was vested with legislative powers in matters relating to the determination of rates and fares. Until such rates and fares were determined by that Court, it was held that they were still in the legislative stage and that considerations of comity required the carriers "to make sure that the State in its final legislative action would not respect what they think their rights to be, before resorting to the courts of the United States."

The cases now at bar were brought by stockholders, and not by the carrier companies. They were brought after the final legislative stage of these merchandise rates had passed, and after the rates had been put into effect by the companies. It is not urged by appellants now, nor pointed out, that any proceedings such as those in Virginia were open to the carriers, and even if such proceedings could have been taken under appropriate constitutional or statutory provisions, the companies had declined to take them.

The Railroad and Warehouse Commission of Minnesota is not a constitutional body and is in no sense a court. The Constitution of Minnesota (Article III, section 1,) provides for a division of the powers of the Government into three distinct departments, the legislative, executive and judicial. It states that "no person or persons belonging to or constituting one of these departments shall exercise any of the powers properly

belonging to either of the others, except in the instances expressly provided in this Constitution."

No instances are provided therein relating to this subject. On the contrary, Article VI, entitled "The Judiciary," provides that the judicial power of the State shall be vested in a Supreme Court, District Courts, Courts of Probate, Justices of the Peace, and such other courts inferior to the Supreme Court as the Legislature may from time to time establish by a two-thirds vote. Other sections of this Article define the jurisdiction of the various courts, and that of the District Court is original jurisdiction in all civil cases, certain criminal cases and in such other cases as may be prescribed by law. With these constitutional provisions in mind, an examination of Chapter 28, Revised Laws of Minnesota 1905, relating to the appointment and duty of the Railroad and Warehouse Commission, and appeals from orders made by it to the District Court, makes it perfectly plain that said Commission is in no sense a court of the State, and indeed it is not claimed that it has ever been so viewed. Its jurisdiction and duties are plainly legislative in character, and the jurisdiction of the District Court upon appeal from its orders can, under no view of the constitutional provisions referred to, be said to be a continuation of the legislative stage of proceedings relating to rates or fares.

Appellants' point is, not that an appeal to another tribunal, legislative in character, should have been taken, but that another hearing should have been demanded by the companies, or compelled by the stockholders through mandamus (if such a remedy were open), before the defendant Commissioners. If no

other consideration affected this question, it is sufficiently answered by the record now before this Court, which shows, beyond possibility of doubt, that any such application to the appellant Railroad and Warehouse Commission would have been futile and mere waste of time. The active defense to these bills of complaint was made by the appellant Commissioners, and, from the outset to the present moment, their position has been a continuous assertion that the merchandise rates are just and reasonable. Appellants' brief, on file in this Court, is their final assertion that the merchandise rates, and in fact all of the rates complained of, should be enforced. In the face of such a record and so emphatic an attitude by these officers, it is a mere quibble to assert this proposition.

And the bills allege:—that prior to the institution of the suits the complainants made demand upon each of the defendant railway companies that it refuse to continue to observe the reduced rates complained of and that it should by proper legal proceedings test the legality and validity of the prescribed rates and that this demand was refused; that the suit was not a collusive one to confer upon a Court of the United States jurisdiction of a case of which it would not otherwise have cognizance; that if the defendant railway company should cease obedience to the Order of September 6, 1906, or the Act of April 4, 1907, or refuse obedience to the Act of April 18, 1907, or the Order of May 3rd, 1907, the defendant Attorney General of the State of Minnesota and the defendants members of the Railroad & Warehouse Commission of the State of Minnesota, would institute mandamus

and other proceedings to enforce the laws and orders and the penalties prescribed for the violation thereof.

The relief prayed in the bills of complaint is, that the Acts and Orders, and each of them, be declared to be in violation of the Constitution of the United States and therefore void; that the defendant railway company and its officers and employes be enjoined from continuing to enforce the rates which had been put in effect, and from adopting the "Commodity Rates" or the "In Rates" to distributing centers; that the defendants, the members of the Railroad and Warehouse Commission and the Attorney General be enjoined from attempting to enforce the orders, or the penalties for the violation thereof; that the Attorney General be enjoined from taking any action to enforce the penalties prescribed by either of said Acts; that the defendant patrons of the defendant railway company and all of the persons affected by the suit be enjoined from instituting any action for the violation of any such Orders and Acts or either of them, or from demanding that any of the rates fixed by such Orders or Acts, or either of them, be given them.

Restraining Order and Contempt Proceedings—Ex Parte Young.

On the filing of the bills of complaint restraining orders against the enforcement of the "Commodity Rates" were granted.

The defendant, Edward T. Young, Attorney General, moved in each case to dismiss the complaint as to him for the reason that it was a suit against the State, and the defendants, members of the Commission, moved in each case to discharge the restraining order on the same grounds and for the same reasons.

The motions were denied.

The defendants, the Attorney General, members of the Commission, then demurred to the bill of complaint in each case.

On the 20th of September, 1907, the Court entered its order overruling each demurrer theretofore interposed, and its further order enjoining the defendants and each of them as prayed in the respective bills of complaint so far as Chapter 232 Gen. Laws Minn. 1907, prescribing rates on certain commodities was concerned. So far as concerned the Order of the Commission dated Sept. 6, 1906, and the two cent passenger rate law, the rates fixed by which had been put into effect prior to the time of the beginning of the suits, and the Order of the Commission dated May 3, 1907, the temporary injunction was denied.

The writ of injunction was served on the defendant Edward T. Young (predecessor in office of appellant Simpson) on the 24th of September 1907, and, on the same day he, as Attorney General of the State of Minnesota, procured in the District Court of Minne-

sota an alternative writ of mandamus directed to the Northern Pacific Railway Company commanding it to obey the provisions of Chapter 232 Gen. Laws Minn. 1907, or show cause to the Court for its failure to do so.

Upon affidavit of one of the solicitors for the complainants in the suit against the Northern Pacific Company the United States Circuit Court under date of Oct. 11, 1907, issued its order directed to defendant Young commanding him to show cause why he should not be punished as for a contempt for his failure to obey the order for a temporary injunction in the Northern Pacific suit. Upon return of this order and on October 21, 1907, the defendant Young was adjudged by the Court guilty of contempt and ordered to pay a fine of $100 and to stand committed to the custody of the United States Marshal until he should pay the fine, and should purge himself of contempt by dismissing the mandamus action which he had instituted in the State Court.

Forthwith the defendant, Edward T. Young, filed with the Supreme Court of the United States his petition for a writ of *Habeas Corpus* and that Court issued its order addressed to the United States Marshal and directing him to show cause why a writ should not be granted. The order was returnable December 2, 1907, and the matter was argued to the Court on that day. A decision was rendered March 23rd, 1908, that the petition should be dismissed. (*Ex Parte Young*, 209 U. S. 123.)

upon two specific grounds: (a) that the freight and passenger rates complained of, "upon the merchandise, passengers and commodities specified therein, respectively," are unjust, unreasonable and confiscatory, meaning thereby obviously within the State and as applied to intrastate business; (b) that if extended and applied to the long-haul interstate business of the company, and if equivalent percentages of reduction effected thereby are applied to the local business of said Company in other States, the said rates would deprive the company as to its entire business in all States of any net earnings whatsoever. In this aspect of the charge of confiscation, the paragraph asserts that if the immediate effect of the reduction could be confined strictly to the State of Minnesota, the Company might be left with a fair revenue upon its *whole system;* that is to say, if the reductions in revenue could be confined to the local intrastate business in Minnesota, the qualified concession is made that from its entire business, interstate and local to other States, the company might be left with a fair revenue upon its whole business. But it is charged that because of the character of the rates complained of, it would be impossible to so restrict their application and effect.

The result, therefore, of paragraph XIII is to charge:

(1) That the rates are confiscatory in that they will deprive the company of a fair return upon that portion of its property devoted to the intrastate business in Minnesota; and

(2) That the effect of the rates will extend beyond their local application, and so reduce the general revenues of the company from its remaining business,

State and interstate, as to deprive it of any net revenue whatsoever.

These allegations are substantially the same as those contained in the original bill of complaint as amended, prior to the decision of the lower court upon the application for a temporary injunction. These allegations were held in the lower court to adequately charge local confiscation, and they were so construed and regarded in the decision of this Court in *Ex Parte Young*, 209 U. S. 123; 144-148.

Finally, it will be noted that appellants have assigned no error in this Court as to this matter.

Appointing Master and Taking of Testimony.

On the 4th day of May, 1908, the Court made its order in each of the cases, appointing Honorable Charles E. Otis of St. Paul, Minnesota, Master in Chancery with power and duty "to examine the evidence, to make the necessary computations, and to find and state the facts so found and the results of such computations, and to recommend to the Court in his report a form of a proper decree herein."

The taking of testimony in the Northern Pacific suit was begun on the 4th day of June, 1908, in the Minneapolis & St. Louis suit on the 4th day of August, 1908, and in the Great Northern suits on the 15th day of March, 1909.

It was arranged that the evidence submitted in any one of the cases in which testimony should be offered, so far as applicable, material and relevant to the issues in any of the other cases should be received as evidence in each of the cases.

The Master made and filed in each suit in which evidence was offered a report identical in form but broad enough to cover all the matters relevant and pertinent to each suit. The Master refers to the suit against the Northern Pacific Railway Company and others as the "Northern Pacific Case," the suit against the Great Northern Railway Company and others as the "Great Northern Case," and the suit against the Minneapolis & St. Louis Railroad Company and others as the "Minneapolis & St. Louis Case."

The taking of testimony was diligently proceeded with and it having become manifest that it would be impossible to take the evidence within the time limited in the orders appointing the Special Master, it was arranged that of the nine cases so referred to the Master, evidence in three thereof should first be taken and considered by the Master and reported to the Court and that the other six suits should rest in abeyance until those selected should have been reported to the Court and by it finally determined.

It was also arranged that the taking of evidence in these three cases should be proceeded with as diligently as practicable, alternating as should be most convenient and best facilitate the progress thereof, and without following any fixed order of proof, either on the part of the complainants or defendants, and that the limit as to time for the taking of testimony fixed by the orders of the Court be considered as removed without making application to the Court therefor.

The taking of the testimony in these cases was finally closed May 26, 1910, and the cases were finally submitted to the Master July 29th, 1910.

The Master's Report was served on counsel Sept. 21, 1910, and, after consideration of exceptions taken to it by complainants and defendants, was filed in Court October 26, 1910.

There were elaborate arguments before the Court upon the Report of the Master, and exceptions thereto, in November 1910, and the Court filed its decision April 8, 1911. (See 184 Fed. Rep. p. 765.)

The Findings and Report of the Master were in all things confirmed and all exceptions thereto overruled.

MASTER'S REPORT.

So fas as concerns the branch of the cases now under consideration, namely, that the rates complained of are confiscatory, the Report of the Master may be stated, in outline of its substance, as follows:

I.

The value of the property of each company in Minnesota used in its transportation business.

In determining such value, the Master:

(a.) Ascertained the *present value,* i. e., the value at the time the property was being used to perform the services covered by the rates complained of, being the year 1908 in the Great Northern and Northern Pacific cases, and 1907 in the Minneapolis & St. Louis case.

(b.) Included in the *base* found by him only the Minnesota *operating* property of each company.

His report shows that he received, considered the evidence on, and found facts following:

(1) Reproduction cost (or present equitable cost) of the Minnesota operating property.

(2) Reproduction cost (or present equitable cost) of the whole system in Northern Pacific case and in Great Northern case.

(3) The original cost of construction of the entire railroad system of each Company.

(4) The par and market value of the stocks and bonds of each company.

(5) The gross earnings and net earnings of each company were definitely shown on its system as a whole, and found and stated on its business within or chargeable to Minnesota.

There was no controversy between the parties as to the total amount of gross earnings derived from the operation of the system of each company or as to the total amount of gross earnings derived from or chargeable to the business of each company in Minnesota.

(6) In the light of these and other facts appearing in the record, he found the fair value of the operating property of each company in Minnesota.

II.

Apportionment of value.

(1) The Master apportioned the total value of the operating property of each company in Minnesota to the various classes of business of such company on the revenue basis.

(2) He also found what such apportionment would be on the operating expense basis.

III.

Minnesota gross earnings, and Minnesota intrastate earnings.

IV.

Minnesota operating expenses and taxes.

The Master found the total amount of operating expenses and taxes of each company which is chargeable to its Minnesota business (there was no controversy concerning the total amount of such items) and divided such total amount between the various classes of business in Minnesota.

V.

These companies are entitled to a fair return on present value of property used.

The Master found that the roads of each company in Minnesota were judiciously located, were built pursuant to public demand therefor, and were economically and honestly managed, and that these properties fall within the general rule that railroads are entitled to such rates as will yield a reasonable return upon the value of the property used, and at the time it is so used, in the public service.

VI.

Income applicable to valuation and rate of return.

The Master found, in each case, the amount of the "income applicable to valuation," i. e. net receipts after payment of only operating expenses and taxes, assigned to the intrastate business and to each class thereof, and also the income applicable to valuation assigned to the interstate business and each class thereof, and that each company was entitled to a return at least sufficient to yield seven per cent per annum upon the fair value of its property used to render the service covered by the rates complained of.

The rates of return on the intrastate business in Minnesota including both freight and passenger of each company, as found by the Master, were as follows:

Northern Pacific, 2.909 per cent.
Great Northern, 3.359 per cent.
Minneapolis & St. Louis, 2.47 per cent.

VII.

Rates complained of are confiscatory.

The Master found that each order and law complained of is unconstitutional and void, because the rates therein prescribed are confiscatory.

EXCEPTIONS TO THE REPORT OF THE MASTER.

Before stating the substance of the Master's Report in greater detail, it is deemed best to refer to the exceptions taken by the parties to various findings and determinations of the Master, so that the issues between the parties with respect thereto may be viewed in the light of the findings themselves and of the reasons given by the Master to support his conclusions.

The complainants below, the appellees here, and the defendants below, the Attorney General and members of the State Railroad Commission, who are the appellants here, filed exceptions.

Complainant's Exceptions.

The principal contentions evidenced by exceptions of complainants are:

(a) That the value of the railroad system of each company is too low, and that the value of its operating property in Minnesota, used in its transportation business, as found by the Master, is too low.

(b) That the amount of operating expenses found by the Master in each case to be chargeable to the intrastate business of each company, respectively, is too low, and that the operating expenses chargeable to each class of such intrastate business—intrastate freight business and intrastate passenger business—as found by the Master, is too low, and that, therefore, the income applicable to the valuation assigned in each case to such Minnesota intrastate business and to each class thereof and the rates of return thereon are too high.

(c) That the rate of return—seven percent, as found is too low to be reasonably adequate.

Complainant's exceptions were separately stated in each case and are all printed in Vol. 1, page 287-320 N. P. case.

Defendant's Exceptions.

The exceptions taken by the defendants were not stated separately, but were made applicable in each case, and are all printed in Vol. 1, page 320-378, N. P. case.

We shall not undertake to make a comprehensive statement of the findings and determinations of the Master which are sought to be challenged by defendant's exceptions, lest we might, by reason of their num-

ber and various forms of statement, inadvertently fail to be strictly accurate, but we shall call attention to some of the principal contentions evidenced by their exceptions, and to some of the findings and determinations of importance in these cases, which were not excepted to by the defendants at all.

Findings Challenged by Exceptions of Defendants.

(a) That the value of the property of each company in Minnesota used in its transportation business, as found by the Master, is too high.

(b) That the method employed by the Master for the apportionment of the total value of the Minnesota property, as found by him in each case, to the various classes of business of each company in Minnesota, is erroneous, and that he assigned too large a proportion of such total valuation to the intrastate business of such company, and to the intrastate freight business and to the intrastate passenger business thereof.

(c) That the amount of operating expenses found by the Master to be chargeable to the intrastate business of each company, respectively, is too high, and that the operating expenses chargeable to each class of such intrastate business, as found by the Master, is too high, and that the income applicable to the valuation so assigned and the rate of return thereon were too low.

(d) That an annual return of seven per cent on the value of the property used as found by the Master, is too high.

Some Findings of the Master not Excepted to by the Defendants.

There are certain findings of the Master of importance, which—as we read defendants' exceptions—are not challenged at all. In each case they are:

(a) The total amount of earnings of the company derived from its transportation business in or chargeable to Minnesota.

(b) The *allocations* of revenue between the freight department and the passenger department and to the intrastate and interstate business of each, and the *division* of miscellaneous earnings (consisting of switching, demurrage, etc., in the freight department, and of mail, express, excess baggage, etc., in the passenger department) and net items of income (consisting of "rentals" and "hire of equipment," which are common to both departments, and "outside operations," which includes revenue from chair cars, sleeping cars, dining cars, etc., which is earned in the passenger department) among the various classes of business.

(c) The total amount of operating expenses incurred in the conduct of or chargeable to the business of each company in Minnesota.

(d) The total amount of taxes chargeable to the business of each company in Minnesota, or the apportionment thereof to the various classes of business.

Exceptions Overruled.

The Master overruled all exceptions of complainants and defendants.

The Circuit Court, after extended argument, con-

firmed the Master's Report and overruled all exceptions.

Assignments of Error.

As we read the appellants' assignments of error, they do not challenge the correctness of any findings or determinations not excepted to, but attempt is made to challenge the correctness of most, if not all, of the findings which were excepted to.

THE SUBSTANCE OF THE MASTER'S REPORT.

Having in mind the substance of the Master's Report in outline and, in a general way, the points raised by the exceptions thereto and appellants' assignments of error, we shall now undertake to state, somewhat in detail, its substance.

The details of the Master's Report on confiscation.

I.

The Value of the Property of Each Company in Minnesota Used in its Transportation Business.

(a) *Value at time of use—present value—is proper basis.*

In Subdivision VI of the Report, Vol. 1, page 217 et seq. N. P. case, the Master said:

> "In determining the remaining issues in the case (meaning the issue of confiscation), the initial step is to ascertain and determine the value of the property devoted to the public service and upon what basis such valuations should be made."

He quoted from the opinion in *Smyth v. Ames*, 169 U. S. 546, in part as follows:

> "But it is equally true that the corporation performing such public services and the people financially interested in its business and affairs have rights that may not be invaded by legislative enactment in disregard of the fundamental guarantees for the protection of property. The corporation may not be required to use its property for the benefit of the public without receiving just compensation for the services rendered by it."

and also quoted the familiar language of that opinion referring to the basis of calculations for the ascertainment of the value of the property.

And the Master said:

> "Here we have a clear declaration that a corporation performing a public service cannot be required to use its property for the benefit of the public without receiving just compensation therefor, not some compensation but just and reasonable compensation, based upon the value of such property. There are, of course, exceptions to this rule. Under no circumstances can the rates be excessive, extortionate or unreasonable. They must be just to the public as well as to the carrier. If the road was unwisely conceived, unfavorably located and not constructed in response to public demand, a return upon such value is not to be expected if it compels unjust rates. But no conditions exist in these cases to take them out of the general rule."

He called attention to and quoted from the language of the opinion of *Wilcox v. Consolidated Gas Company*, 212 U. S. 19, as follows:

> "There must be a fair return upon the reasonable value of the property at the time it is being used for the public * * * and

we concur with the court below in holding that the value of the propery is to be determined *as of the time when the inquiry is made regarding the rates.*

If the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is, at any rate, the general rule."

Following this quotation, the Master stated his understanding of the opinion as follows:

> "This clearly shows that the company is to share as well as the public in the general growth and prosperity of the country. * * *"

He referred to the language of the Circuit Court in the Wilcox case, 151 Federal 849, as follows:

> "It is impossible to observe this continued use of the present tense in these decisions of the highest court without feeling that the actual or reproductive value at the time of inquiry is the first and most important figure to be ascertained."

Referring to the roads under consideration, he said:

> "The roads under consideration were constructed and completed many years ago and what may have gone into them, if it could be determined with reasonable certainty, would not take into consideration the changed condition of the country since their original construction, its growth and prosperity—in which the companies are entitled to share—and by reason of changed conditions and lapse of time it has little weight in arriving at present values."

He quoted from the language of Circuit Judge Hook in the case of *M., K. & T. Railway v. Love, et al.*, (177 Fed. 493), as follows:

> "There is another matter to be regarded, not specifically mentioned in the above excerpt from the opinion of Mr. Justice Harlan (in *Smyth v. Ames*). An established railroad system may be worth more than its original cost and more than the mere cost of its physical reproduction. It has passed the initial period of little or no return to its owners which, of greater or less duration, almost always follows construction and is not infrequently marked by default and bankruptcy. The inevitable errors in its building which finite minds and hands cannot avoid have been measurably corrected, time and effort have produced a commercial adjustment between it and the country it was intended to serve, relations have been established with patrons, and sources of traffic have been opened up and made tributary. In other words, the railroad, unlike one newly constructed, is fully equipped and is doing business as a going concern. It has attained a position after many experiences common to railroad enterprises which entail loss and cost not paid from current earnings and which correspondingly make for value."

After further reference to the decision last mentioned, the Master said:

> "In the light of this decision and others therein referred to and approved, our first duty is to ascertain the fair value of the property devoted to the public service."

(Ibid. pages 217-219.)

(b) *Operating properties only included.*

In ascertainment of the property value in Minnesota which was used by the Master as the base for the calculation of income and return, he took into account only the *operating properties.*

He said:

> "To this end a large volume of testimony was produced before the Master on behalf of complainants and the State, respectively, as to the reproduction cost of such property—and by such property is included only that which is used for the benefit of the public and which, with the revenue directly or indirectly derived from such use, is alone to be considered in determining the question of a reasonable rate. Other revenues and other properties the company may have, but as to them the public has no concern."

The report shows, with considerable detail, the kind and character of the evidence received and considered, and states the facts found, which bear upon the property valuation used by the Master as a base for his calculation of the rate of return. (Page 219-220, Vol. 1 N. P. Case).

(1) *Reproduction cost (or present equitable cost) of Minnesota property.*

In Subdivision VII of his Report (page 220-238 Vol. 1 N. P. Case) the Master reviews the evidence touching the reproduction cost of each class of items entering into the property of each company, and, at page 235-238, he states the summaries of valuation of the physical property in Minnesota, and finds values as follows:

Northern Pacific	$ 90,204,545
Great Northern	138,425,291
Minneapolis & St. Louis	21,608,464

Depreciation.

He said:

"Having thus found the cost of reproduction new of these several railroad properties, the question remains what if anything shall be deducted for depreciation.

It is established that the roadbed is constantly increasing in value. It becomes solidified, embankments and slopes of excavations become settled and stable and so the better resist effects of rains and frost. It becomes adjusted to surface drainage and the adjustment is made permanent by concrete structures and rip-rap, and in other ways a roadbed long in use is far more valuable than one newly constructed. On the other hand, everything on and above the roadbed depreciates from wear and weather-stress. The life of a tie is from eight to ten years only. Structures become antiquated, inadequate and more or less dilapidated. Ballast requires renewal, tools and machinery wear out, cars, locomotives and equipment, as time goes on, are worn out or discarded for newer types. A large part of the depreciation, however, is taken care of by constant repairs, renewals, additions and replacements, a sufficient sum being annually set aside and devoted to this purpose, so that this, with appreciation of roadbed and adaptation to the needs of the country and of the public served, together with working capital (which was not included in the summaries making the totals above given) hereinafter mentioned fully offsets all depreciation and renders the physical properties of the road not less valuable than their cost of reproduction new. This conclusion is fully

supported by the evidence and also justifies the language hereinbefore cited from the Missouri, Kansas & Texas Railway case, decided by Mr. Justice Hook.

There is another element which may properly be considered in connection with the question of depreciation and as an offset to it. It is necessary that the companies should have on call a large sum of money for the conduct of the business and to meet emergencies. No doubt a large part of it draws a low rate of interest while on deposit in bank, but it must be that very considerable amounts are idle and unproductive and must be considered as an element of value in the matter of rate-making.

In view of all the foregoing considerations it follows without question that there should be no deductions on account of depreciation."

(2) *Reproduction cost (or present equitable cost) of the whole system in Northern Pacific case and Great Northern case.*

In Subdivision XIII of his Report (Vol. 1, page 245-246, N. P. case), the Master found the reproduction new cost of the Northern Pacific system and of the Great Northern system.

In the *Northern Pacific case* after certain eliminations from complainants' estimate, the Master fixed the valuation at *$452,666,489*.

In the *Great Northern case* the Master fixed cost of reproduction of the whole system at *$457,129,469*.

(3) *Original cost of construction.*

In Subdivision X of his Report, (Vol. 1, page 240-244, N P. case), the Master found the original cost of construction of the Northern Pacific system and of the

Great Northern system and of the Minneapolis & St. Louis system.

He said:

> "In the Northern Pacific, the Great Northern and Minneapolis & St. Louis cases a large amount of evidence was produced before the Master for the purpose of showing actual cost of construction of the entire railroad systems from the organization of the original companies and by them and their successors, the present companies, down to April 30, 1908. This could be shown only by the books and records of the two companies, the Northern Pacific and Great Northern, and in the early history of the original companies these are somewhat obscure and uncertain, and, by reason of lapse of time, cannot be verified by other proof."

In the *Northern Pacific case*, after making certain deductions, he found *"the cost of construction account is reduced to $312,243,555."*

He ascertained that the Minnesota track mileage was twenty-one per cent of the total track mileage of the system, and took twenty-one per cent of the original cost of construction or "a total of $65,571,462," and said:

> "This is considerably less than the valuation of the physical properties as found and makes no allowance for appreciation of property incident to the growth or prosperity of the country in which the company is entitled to share."

In the *Great Northern case* he found that the "total book value, as before stated," (meaning original cost of construction) was $319,681,815, and deducted there-

from (without justification, as we claim) $24,280,602, leaving a balance of *$295,401,213*.

He said:

> "In explanation of some of the foregoing deductions it is to be kept in mind that as to acquired roads the question is not what it cost the company to take them over but what money has actually gone into their construction."

He ascertained the total track mileage of the company's entire system, and its Minnesota mileage, being 32.59 per cent of the total, and applied that percentage to the original cost of construction, and thereby produced $96,271,255.

In the *Minneapolis & St. Louis case* he found that the "book cost of property and investments amounted to $30,572,619." He disallowed and deducted amounts paid for discounts, and produced a balance of *$28,574,225*, which, divided on the mileage basis assigned to Minnesota 59.94 per cent or *$17,127,390*. Apportioned on a gross revenue basis over the entire system, 77.41 per cent assigns to Minnesota *$22,119,307*.

He quotes from Professor B. H. Meyer, of the Wisconsin University (now a member of the Interstate Commerce Commission) as to the relative value of the reproduction cost new and of original cost of construction as evidence of the fair value of railroad property. (p. 242 V. 1 N. P.)

(4) *Market value of Stocks and Bonds.*

At Subdivision IX of his Report, (Vol. 1, page 239-240, N. P. case) the Master considered the average market value of the stocks and bonds of these companies over a period of recent years.

In the *Northern Pacific case*, a period of five years, ending April 30, 1908, was taken, and "such average value, amounting in the aggregate to the sum of *$509,824,723*." The par value April 30, 1908, of the stocks and bonds was $405,796,932.65.

He apportioned such average market value on a track mileage basis, and assigned to Minnesota $107,063,191.

In the *Great Northern case*, the same five years ending June 30, 1908, were taken. The average market value of the stocks and bonds was found to be $452,363,804. The par value of average amount outstanding was found to be $263,078,242.42.

32.59 per cent of the total mileage is in Minnesota. Applying that percentage to the average market value, so found, assigns to Minnesota *$147,425,363*.

In the *Minneapolis & St. Louis case*, he found the par value of the stocks and bonds in 1908 to be $30,011,800, and the market value in the same year to be $22,006,197, "which, apportioned on basis of mileage owned by the company, of which about sixty per cent is in Minnesota, gives a valuation assignable to the State of $13,203,718, or about one-fifth less than the value of the property as conceded by the State within Minnesota, and thirty per cent less than its value as found by the Master on the reproduction basis."

(5) *Gross earnings and net earnings of each system were definitely shown.*

The Master found and stated the gross earnings and net earnings derived from or chargeable to the Minnesota business.

The amount of the gross earnings and net earnings

appear in the annual reports of each company which were regularly, in due course of business, pursuant to the law of the State and the requirements of the State Railroad and Warehouse Commission, made to the Commission. Abstracts of these reports are contained in Volume 1 of the record in each case and at the end thereof. There was no controversy between the parties as to these amounts.

From these reports we take the following figures:

Gross Operating Revenue.

	1907	1908	1909
Nor. Pac.—	$68,447,453.65	$68,235,484.17	$68,460,747.21
G. N.—	50,208,035.10	54,069,538.74	53,266,090.02
M. & St. L.—	4,152,953.99	3,826,561.07	4,171,315.17

Net Operating Revenue.

	1907	1908	1909
Nor. Pac.—	$30,845,515.53	$28,370,450.87	$30,440,742.56
G. N.—	20,761,168.80	18,201,938.50	21,078,387.68
M. & St. L.—	1,594,411.56	1,177,597.15	1,325,709.09

(See Annual Reports to the State which are printed at the end of Vol. 1 of the record in each case.)

Note.—The figures given above show "Operating Revenue" only and do not include income from other sources, as for example, net "rentals, etc.," or income on investments in outside properties.

(6) In the light of the foregoing findings of fact, bearing upon the valuation of the Minnesota operating properties of each of these companies, and of other facts in the record, the Master found the fair value of the Minnesota operating properties of each company, and based his calculations of the net rate of return thereon.

In the Northern Pacific case, *$90,204,545.* (See Table of Results in Northern Pacific case, attached to page 264, Vol. 1, N. P.)

In the Great Northern case, *$138,425,291.* (See Table of Results in Great Northern case, attached to page 270, Vol. 1, N. P.)

In the Minneapolis & St. Louis case *$21,608,464.* (See page 274, Vol 1, N. P. case.)

II.

Apportionment of Value.

(1) *The Master apportioned the total value of Minnesota property of each company to its various classes of business on the revenue basis.*

In Subdivision XIV of his Report, (Vol. 1, page 247 et seq. N. P. case) the Master said:

> "A common use in general is made of the property devoted to the public service for both the freight and passenger business, both state and interstate, respectively, and in making a statement with reference to each class so as to determine revenue with respect to cost, there must be a division of property valuation on some fair basis and an assignment to each

of its proper proportion, so that each may carry its proper share of property expense.

It is inequitable that the traveling public, largely on pleasure bent, should cast any part of the expense it incurs on the freight business which has to do almost altogether with traffic in which the public as a whole is directly interested.

On the other hand, it has never been claimed that the latter should be relieved at the expense of the former, and the cases all recognize the propriety of separation upon an equable basis as near as may be.

Furthermore, to determine what net revenue is derived from intrastate business and the per cent of return upon property used in that class of business, it becomes necessary to make a subdivision of property values and determine what part thereof should be assigned to state and to interstate business, respectively. The revenues from each class of business within and properly assignable to the state are known and the amount thereof and the separation as between states accepted by both parties and are practically free from estimated approximations.

Of course, any division of property value between the two classes of business, freight and passenger, must be an approximation, but one made on the relation of gross revenue derived from each kind of business has been uniformly accepted as the fairest, all things considered, in all rate cases heretofore judicially determined.

While a division of property valuation on the relation of cost has been suggested by defendants, it was practically conceded to be as open to criticism as that made on the basis of revenue. Relative cost as hereafter found is at best a rough and unsatisfactory approximation, necessarily inaccurate, and should not be

accepted as a divisional basis if it can be avoided."

In the *Northern Pacific case,* the apportionment in detail is to be found in Vol. 1, page 248 and 249, N. P. case.

In the *Great Northern case,* the apportionment in detail is to be found in Vol. 1, page 249 and 250, N. P. case.

In the *Minneapolis & St. Louis case,* the apportionment in detail is to be found at Subdivision XVII of the Report, in Vol. 1, page 273 and 274, N. P. case.

The apportionments so found are used in the Master's calculation in the *Northern Pacific case* in the table "Results in Northern Pacific Case," Vol. 1, attached to page 264;

And in the *Great Northern case,* the table "Results in Great Northern Case," attached to page 270, Vol. 1, N. P. case;

And in the *Minneapolis & St. Louis case,* in his calculations to be found in Vol. 1, page 274-280, N. P. case.

(2) *He also found what such apportionments would be on the operating expense basis.*

It was suggested in the arguments before the Master that the total valuation of the operating property of each company in Minnesota apportioned to its various classes of business might fairly be made on the basis of operating expenses, that is to say, by assigning to each such class of business such proportion of the total valuation as the operating expenses chargeable to that class of business is to the total operating expenses in the State, and the Master found what such apportionments would be and calculated the rates of

return on that basis in the Great Northern and Northern Pacific cases.

For the *Northern Pacific case,* see Vol. 1, page 265, N. P. Record.

For the *Great Northern case,* see Vol. 1, page 271, N. P. Record.

In each case, the rates of return so calculated on the intrastate business and on each class of the intrastate business are lower than the rates of return arrived at by apportioning property valuation to the various classes of business on the revenue basis.

In the *Minneapolis & St. Louis case,* the calculations made by the Master are based upon the assumption that it costs no more on the lines of that company in Minnesota to earn a dollar or any other given amount of revenue in the intrastate business than it does in the corresponding interstate business, although he found as a fact that the production of a given amount of revenue in the intrastate business is attended by *greater cost* than the production of like amount of revenue in the corresponding interstate business. The rates of return yielded by the business of that company are so low that the Master apparently was satisfied that, as to that company, the rates were clearly confiscatory even on a basis of calculation undoubtedly too favorable to defendants. If the calculations of the Master were based upon an apportionment of the value of the property on the *operating expense basis* instead of upon the *revenue basis,* the result would not be substantially different, because no factor of extra cost of intrastate business over interstate business was taken into account in his calculations.

III.

Minnesota Gross Earnings From All Sources Which Involve Any Use of the Property Valued Were Taken Into Account by the Master.

The Master found in each case the total gross earnings of the company from all sources involving any use of the property valued, within the State of Minnesota; that is to say, the revenue derived from the transportation of freight, miscellaneous freight earnings, derived from switching, demurrage, storage, etc., the revenue derived from the transportation of persons, miscellaneous passenger earnings consisting of mail, express, etc., and, in addition thereto, items of "other income," namely, "rentals," which include the excess of rentals received over rentals paid, "hire of equipment," which includes the excess received for the use of its equipment over the amount it pays for the use of equipment of other companies, and "outside operations," which includes net items of income over operating expenses, which are derived from sleeping, dining, chair and parlor cars, etc.

For *Northern Pacific case*, see page 258-263, Vol. 1, N. P. case.

For *Great Northern case*, see page 265-269, Vol. 1, N. P. case.

For *Minneapolis & St. Louis case*, see page 278-279, Vol. 1, N. P. case.

The Master did not include items of income derived from investments in non-railroad property, as, for example, stocks and bonds of companies other than railroads.

The miscellaneous freight earnings, the miscellaneous passenger earnings, and the items of net income above referred to were divided to the proper classes of intra and interstate business, respectively, on the transportation revenue basis.

For the *Northern Pacific case,* see table attached to page 264, Vol. 1 N. P. case.

For the *Great Northern case,* see table attached to page 270, Vol. 1 N. P. case.

For the *Minneapolis & St. Louis case,* see pages 278 and 279, Vol. 1 N. P. case.

No exception or assignment of error challenges the correctness of the determination of the Master, in any case, of the total amount of operating revenues in Minnesota, or its allocation or division to the different classes of business.

IV.

Minnesota Operating Expenses and Taxes.

The Master found the total amount of operating expenses and taxes of each company which is chargeable to its Minnesota business (there was no controversy concerning the total amount of such items) and divided such total amount between the various classes of business in Minnesota.

The accounts of these companies were kept in full accordance with the rules and classification of accounts promulgated by the Interstate Commerce Commission under authority of the Act to Regulate Commerce The defendants did not claim that any sums were improperly charged to operating expenses or taxes in Minnesota. These sums in each case were as follows:

Northern Pacific.

Operating expenses..... $7,655,350.20
Taxes 596,118.91
(Table attached to page 264, Vol. 1, N. P. Case.)

Great Northern.

Operating expenses.....$11,811,414.35
Taxes 839,878.11
(Table attached to page 270, Vol. 1, N. P. Case.)

Minneapolis & St. Louis.

Operating expenses..... $1,554,595.49
Taxes 124,474.58
(Table attached to page 278, Vol. 1, N. P. Case.)

1. *The Master's Division of Operating Expenses between Freight Department and Passenger Department.*

There is no disagreement between the parties in any case as to the *total amount of operating expenses* properly chargeable to the business in Minnesota.

The Interstate Commerce Commission does not *now* require railway companies to keep separately the operating expenses chargeable to either the freight department or the passenger department.

Each of these companies has however regularly for many years last past—perhaps more than 20 years—so kept its books of account as to show separately the operating expenses of the freight department and of the passenger department. Certain items of expense are directly incurred in the freight department and other items directly incurred in the passenger department. Each company has regularly assigned to the freight business all those items of cost directly incurred in conducting that business and to the passenger busi-

ness all those items of cost directly incurred in conducting that business. These assignments were accepted as correct at the trial by both parties, and the items thereof are called "allocated items" and cover about 60% of all expenses. The remaining items of cost not so allocated and which are common to and are incurred in conducting both freight and passenger business are not capable of separation by any direct assignment to each department, and must be divided between the two departments on some basis more or less arbitrary.

Such proportion of the items of expense which are common to the freight department and the passenger department is assigned to the passenger department as the revenue *passenger train miles* (or the *revenue passenger engine miles,* as the case may be) in the passenger department bear to the total in both departments. The balance of such common items is assigned to the freight department. (Subdivision 16, pages 252, 253, Vol. 1, N. P. case.) (Master's Report.)

At page 253 et seq., supra, is the following:

> "The division so made of such common items of cost between freight and passenger for the year ending June 30, 1908, in the Northern Pacific case is found in Ex. 79.—Elliott, and the method pursued is fully explained by the assistant comptroller, Johnson, in his testimony found in Vol. 6 at pages 3249 et seq., of the printed record in that case. A like division in the Great Northern case is found in Ex. 47—Martin, with explanations by the assistant comptroller, Martin, of the method pursued, in Vol. 2, at page 955 of the printed record in that case.

The method is the same in both cases and is the one now, and which for many years last past has been in general use upon all leading railroads of the country when any attempt at such division is made, constituting, in mileage at least, about one-third of all the lines of railway in the United States.

A division of this character was at one time required by the Interstate Commerce Commission, and the foregoing method was the one prescribed for the purpose. Such requirement was subsequently withdrawn and such division of cost between freight and passenger seems to have been quite generally abandoned, but many companies, for their own use and information, continue to make such division according to this method, which would seem to have been the outgrowth of practical observation and experience in the exercise of an honest judgment. When it was originally adopted, there was no apparent reason, from interest or otherwise, for unduly burdening either class of business with more than its proper share of common expense. Its use is approved and supported by the evidence of a number of witnesses having an intimate knowledge and large experience in the practical operation of railway transportation in all its details.

The method of division presented by the evidence on behalf of defendants is one devised by their accountant, Mr. C. W. Hillman, and may be styled the Hillman method. There is no difference between the parties in the division of train movement items, being items from 10 to 27 in the schedule of items used by them. The difference arises with respect to the rest of the items contained in such schedule, and they are for the most part divided by Mr. Hillman, item by item, in accordance with his individual judgment and opinion as to the propriety of such division.

No other witness was called in support of his method of division, nor does it appear that his experience was such in the practical operation of a railway as to specially qualify him for the work. He is certainly an able accountant and statistician, but could not be classed as a practical operating man. It seems to the Master that the weight of evidence fails to sustain his method.

In the Northern Pacific case, for the fiscal year ending June 30, 1907, it results in taking something over $400,000 from the passenger and adding it to the freight expense, and in the Great Northern case, for the fiscal year ending June 30, 1908, it in like manner affects the relation of passenger to freight expense in the sum of $933,694.

Manifestly no one else, proceeding along the same lines that Hillman did but exercising his own individual judgment as to what, with respect to each item, was a proper division, would have reached the same results obtained by Hillman, except as a mere coincidence.

It was conceded that the method could be made to produce any result desired by the person making use of it unless every step taken by its author, varying from time to time according to conditions, were strictly followed:

If the views of the Master as to what is a reasonable rate of return, and his valuations, are accepted and approved, the Hillman method, both as to division of freight and passenger, and his methods of determining the per cent of return on state business, would not, if adopted, change the decree to be entered, either in form or substance. It would, however, make a wide spread between the per cent of return from each class of business, so wide as to itself suggest that the division made

by him was an improper one, greatly favoring, as it does, the net revenue from passenger business.

The Master determines that the method of division of common cost between the freight and passenger business made by the Northern Pacific Company and the Great Northern Company with respect to the traffic on their respective roads most nearly approximates an accurate result, and the same is adopted for the purpose of division in the Northern Pacific and Great Northern cases.

In the Minneapolis & St. Louis case a division of cost between freight and passenger business was made by the company upon a combination of train, car and engine-mileage, with results so close to those produced by the Hillman method that they were accepted by the defendants.

The results of divisions of cost between freight and passenger and resulting net revenue in this case will appear later in this report."

Later in this brief we shall discuss the methods suggested for the division of the total operating expenses in the state between the freight department and the passenger department.

2. *Division of Minnesota freight operating expenses between intrastate freight business and interstate freight business.*

Division of Minnesota passenger operating expenses between the intrastate passenger business and the interstate passenger business.

In subdivision XVII pages 255-263, Vol. 1 N. P. Case, the Master considers the methods suggested by the parties respectively for making the division of operating expenses above referred to. He said:

"In the two cases mentioned in the caption of this subdivision we now have the following definitely ascertained elements for determining net return in the two classes of business, viz.:

1st. Gross revenue from state and interstate business, both freight and passenger, respectively, separately stated;

2nd. Relation of revenue per ton per mile and per passenger per mile, respectively, state to interstate;

3rd. Gross cost of operation, covering and being an aggregation of cost of state and interstate business, freight and passenger;

4th. The division of cost between the freight and passenger business as herein found and determined.

The element not certainly known and which must be ascertained and determined from the evidence is the relation of cost, state to interstate, in each class of business, freight and passenger. This found as to passenger-miles and ton-miles respectively, and the problem of determining the net revenue from each class can be readily solved.

It is needless here to recount the difficulties this problem presents, growing out of the common use of the same property in contemporaneously conducting both state and interstate transportation. They have been often recited with much particularity in railway rate decisions and are again fully described by experi-

enced railway officials and employes called as witnesses in these cases, and their testimony more than justifies a suggestion made by Judge Van Devanter in response to some inquiry of counsel when orally delivering his opinion in *St. Louis & C. R. Co. v. Allen*, in the course of which he made use of the following language, viz.:

'Taking as your premise that the authority of Congress is supreme and therefore in respect of interstate commerce its authority shall be everywhere equally dominant, I am not sure but that the result would be in some instances where there is such confusion, such an interweaving, as that there could not be a separation, that there the power of Congress would be the dominant power and that the other power would not exist; not on the theory that Congress has any authority over state rates, but that since its authority over interstate commerce must reach in every part and parcel of it, Congress must say that anything that gets interwoven with it must partake of the exercise of that authority. Otherwise the power of Congress, which is supreme, would not be supreme.'

It is conceded by all that there is practically no difference in cost arising from the fact that a transportation is across a state line and not wholly within the state, and there is no dispute but that a substanial difference exists in the cost of doing the short-haul and the long-haul business.

This is clearly evidenced, in the freight business, by all rate tariffs, including the schedules of rates prescribed by the Commission's orders and the Commodity Rate Act which gave rise to these suits.

The orders covering merchandise rates make the hauling charge for the first two hundred miles twice as large as for the second two

hundred miles, and four times as large as for distances beyond the four hundred-mile point, and a similar relation exists in the legislative commodity rates.

There is, of course, some state traffic having a reasonably long haul and some interstate traffic having a short haul, but by far the greater volume of state business belongs to the more expensive short-haul class, and in the interstate business by far the greater part thereof belongs to the less expensive long-haul class.

This is established by the fact that in the Northern Pacific case, for the year ending June 30, 1908, as the evidence shows, there were 960,709,494 ton-miles of interstate traffic touching Minnesota, with an average haul of 485.3 miles as against 130,580,988 ton-miles of state traffic with an average haul of only 104.52 miles. (Ex. 80—Elliott.)

In the Great Northern case, for the year ending June 30, 1908, the evidence shows 1,952,426,967 ton-miles of interstate traffic touching Minnesota, with an average haul of 411.8 miles, as against 171,317,766 ton-miles of state traffic with an average haul of only 113.3 miles. (Ex. 53—Ward.)

State traffic is always burdened with the expense of two terminals within the state, whereas interstate traffic very generally is charged with the expense of but one terminal, and as to overhead or trans-state shipments in carload lots, as is a very considerable part of the business, no such expense is incurred beyond the comparatively small yard expense in the making up and handling of through trains."

It is estimated in the Northern Pacific case that of the interstate freight touching the State of Minnesota, from 10 to 12 per cent of the ton miles made within the state are made by freight passing entirely across

the state without receiving any terminal service within it, nor any yard service within it, except what is involved in breaking and making up trains in divisional yards. (Vol. 10, Exhibit 80 Elliott, N. P. Case.)

In the Great Northern case it is estimated that of the interstate freight touching the State of Minnesota, from 14 to 17 per cent of the ton miles made within the state are made by freight passing entirely across the state, without receiving any terminal service within it, nor any yard service within it, except what is involved in breaking and making up trains in divisional yards.

About one half of the total mileage in Minnesota is operated as main line and the remainder as branch line.

(See Exhibit 53 Ward, vol. 6 G. N. Case.)

The Master further said: (vol. 1 N. P. Case pages 256, 257):

> "Doubtless the most marked difference in transportation cost depends upon whether the freight handled is through or local with respect to the several operating divisions of the line. That is, freight hauled over less than one division on local or peddling trains, as they are called, is known as local freight, and freight hauled over one or more divisions on through trains is known as through freight on such divisions, and this without reference to whether it is state or interstate traffic. A divisional distance consists, in general, of from about 110 to 150 miles the same constituting an engine run.
>
> There is, of course, some intrastate traffic which moves on through trains, but the greater part thereof is local freight. There is also a considerable amount of interstate traffic which moves on local trains, but by far the greater

part thereof is through freight, as is shown by the long average haul. It is also true that local trains often carry through freight and through trains carry local freight in order to secure the most efficient and economical operation.

In view of these and all other conditions attending transportation, as desclosed by the evidence, entering into the question of relative expense, it becomes a difficult matter to determine with any degree of certainty the relation of cost per ton per mile in transporting state and interstate freight respectively, the expense of which is practically all common to both and not subject to allocation.

The complainants have produced as witnesses before the Master a very considerable number of able and competent operating men intimately acquainted with and having a wide knowledge of all details of railway transportation derived from long personal experience in conducting such business. Their testimony is to the effect that it costs from three to seven times as much per ton per mile to do the intrastate freight business as to do the interstate freight business; and that it costs from twenty five to fifty per cent per passenger per mile more to do the state passenger business than to do the interstate passenger business. The defendants concede that there is greater cost attending the doing of state business, both passenger and freight, but insist that this increase cost is largely, if not wholly, taken up by the increased revenue per ton and per passenger per mile derived from the state traffic."

The witnesses who testified for these complainants were men of vast experience in railroad matters and well qualified to speak on the subject. They were:

James J. Hill, Chairman of the Board of Directors of the Great Northern Company;

Howard Elliott, President of the Northern Pacific Company;

Frank E. Ward, General Manager of the Chicago, Burlington and Quincy Company, who was formerly, and for many years, with the Great Northern Company, and its General Manager;

Chester J. McPherson, Assistant General Manager of the Missouri Pacific Company, who had had more than 31 years railroad experience in various capacities —telegraph operator, station agent, train dispatcher, yardmaster, master of transportation, and who has given much attention to the cost of conducting transportation of various kinds of traffic and relative cost of doing intrastate business as compared with the cost of doing interstate business.

William B. Doddridge, formerly an official of the Missouri Pacific Company, St. Louis & South Western Company, and since 1900 engaged in expert railroad work, making examinations of property for bankers, capitalists, railway companies, and studying the subject of relative cost of intrastate business and interstate business;

James N. Tittemore, General Traffic Manager of the Minneapolis and St. Louis Company, who has had much experience in railroad matters, and in the making of railroad rates for the transportation of interstate business as well as intrastate business.

The reasons given by these witnesses, based upon a vast amount of observation and experience, in support of the opinions which they expressed, commend themselves as sound. They not only sustain the findings of the Master as to the extra cost of intrastate business over that of corresponding interstate busi-

ness but require, as we believe and will hereafter contend, a finding of a higher extra cost especially in case of the intrastate freight business on the Great Northern road in Minnesota.

The only witness called by the defendants on this point was Mr. C. W. Hillman, an expert accountant, who never had any experience in directing railroad operations which was at all calculated to give him any control over the expenses of operation, or a familiarity with the relative cost of intrastate business to interstate business, and who never, as railway accountant or otherwise,—except as an expert witness in rate cases,—had anything to do with the cost of intrastate business, freight or passenger.

Since about the time of the commencement of these suits he has been employed as an expert accountant and witness in these and similar cases in other states. He invented a scheme by means of elaborate calculations for an arithmetical statement of results which he claimed to show the cost of each class of business. He is not supported by the opinion of any witness—not even of the appellant Staples, an expert in such matters, who was upon the stand and testified at length on other topics—and it appears that nobody else had prior to the giving of his testimony here ever employed any method similar to his.

It was abundantly proven by the testimony of experts and eminent railroad men that no such system of accounting as was suggested by the defendants, and by Mr. Hillman in their behalf, was ever employed by any railroad company anywhere. Nothing comparable to it had ever been prescribed by the Minnesota Railroad and Warehouse Commission, notwithstanding

it had had power under the law for many years to prescribe the forms of accounts to be kept by railroads in Minnesota.

It appeared—and it is a matter of which the Court may properly take notice without proof—that the Interstate Commerce Commission has prescribed, under authority granted to it by the Act to Regulate Commerce, a most elaborate system of accounts covering classifications of operating revenues, of operating expenses, of expenditures for road and equipment, of steam roads and corresponding classifications of accounts of other service companies within the jurisdiction of the Commission.

It is likely that such a system of accounts would have been known to other accountants and prescribed by some public authority if it is of any value at all.

Much consideration was given to this subject in the testimony, in arguments before the Master, and before the Circuit Court.

The Master said: (Vol. 1, N. P. p. 257, 258.)

> "Their chief reliance is upon the evidence of their expert accountant Mr. Hillman, before mentioned, by the use of whose method, similar in many respects to that devised by him for dividing common items of cost between freight and passenger, in connection with his testimony in support of such method they have endeavored to establish their claim. The tables presented by him as a basis of his testimony are for most items of cost the result of his own personal judgment and opinion, and as to some of them upon which his results are predicated there have been certain material assumptions not justified by the conditions found to exist. Here, too, it is conceded

that any material difference of opinion as to division—as there would most likely be with regard to some, if not many, of the items—would effect very substantially different results.

Another matter tending to discredit the Hillman method is the wide spread in operating per cent between state and interstate business of some of the companies and the low operating per cent as to state business on some lines as compared with that on others and as compared with the operating per cent generally found to exist on all lines of all business done in the country.

Operating per cent is the per cent of gross revenue absorbed by cost of operation, and if we may take the statement of counsel in one of the briefs for defendants (and it would seem to be a matter as to which the Court might take judicial notice), such operating expense is about 60% of gross revenue generally throughout the country. By the Hillman method percentages of operating expense to revenue after deducting estimated losses from the prescribed rates in the three cases are found to be as follows:

Intra passenger, N. P., 58.89; G. N., 67; M. & St. L., 62.54.

Inter passenger, N. P., 51.69; G. N., 59.2; M. & St. L., 63.67.

Intra freight, N. P., 55.21; G. N., 41.51; M. & St. L., 48.19.

Inter freight, N. P., 54.47; G. N., 60.58; M. & St. L., 85.03.

In the St. Louis case, in the intrastate business, without deducting for estimated loss, the operating expense would have been *only 41.9* per cent of intrastate revenue, and in the Great Northern case such operating expense would have been *only 39.9* per cent of intrastate

revenue. There seems to be no substantial reason for the difference here found to exist on the Northern Pacific when compared with the Great Northern line, and the marked and necessarily conceded difference in density of traffic over these lines and that over the Minneapolis & St. Louis line, the former greatly exceeding the latter, would be expected to produce very different results than those shown by this table of comparisons. The wide disparities and unusual results from comparisons are not adequately explained, and they strongly suggest an improper method of division between the two classes of business."

If Hillman's results are right, the freight rates complained of are too high on the weakest road, the Minneapolis & St. Louis and only compensatory on the strongest road, the Northern Pacific.

3. *Findings of the Master As to Extra Cost of Intrastate Business Over Corresponding Interstate Business.*

The Report of the Master on this point is as follows: (Page 258, Vol. 1 N. P. Case.)

"The Master finds from the weight of testimony that the cost per ton mile of doing state freight business is at least two and one-half times as much as is such cost in doing the interstate freight business in Minnesota, and that the testimony would amply sustain, if it does not compel, a finding that such relation of cost is as three to one. He also finds from the evidence that the cost per passenger mile in the state passenger business is at least fifteen per cent greater than such cost in the interstate passenger business in Minnesota."

Judge Sanborn in his opinion in these cases carefully considered the subject of extra cost of the intrastate business over the corresponding cost of the interstate business (See pages 428-431, Vol. 1, N. P. Case) and cites in confirmation of the Master's findings the following cases:

Missouri, Kansas & Texas Ry. Co. v. Love (C. C.), 177 Fed. 493, 497;
In re *Arkansas Railroad Rates* (C. C.), 163 Fed. 141, 142;
Chicago, Milwaukee & St. Paul Ry. Co. v. Tompkins (C. C.), 176 U. S. 167;
Minneapolis & St. Louis Railroad Co. v. Minnesota, 186 U. S. 257, 262;
Ames v. Union Pacific Ry. Co. (C. C.), 64 Fed. 165, 179, 184;
Northern Pacific Ry. Co. v. Keyes (C. C.), 91 Fed. 47, 54;
St. Louis & S. F. Ry. Co. v. Hadley (C. C.), 168 Fed. 317, 348-352.

4. *Taxes.*

The taxes paid by the railroad companies to the State of Minnesota are fixed on a gross earnings basis and are at the rate of four per cent of the gross earnings. There is no dispute as to the amount of the earnings or the allocation or distribution thereof to the various classes of business. The Master rightly apportioned taxes on the basis of revenue. The correctness of this determination is not denied.

5. *The Master's Calculations by Use of the Findings of Fact Above Mentioned.*

He said (pages 258 to 263, Vol. 1, N. P. Case):

"As a result of the foregoing findings of fact we are now in possession of all the elements for a finding of net revenue derived from the doing of intrastate freight business and intrastate passenger business, respectively, and they may be stated as follows for each of the three cases:

Northern Pacific Case.

Net Revenue Derived From Freight Business and Passenger Business, Respectively.

Gross Earnings.

The total gross earnings of the Company from all sources, involving any use of the property above valued, within the state of Minnesota for the fiscal year ending June 30, 1908, was $13,682,983.27. (Complainant's Exhibit 80B—Elliott, treating rentals as a 'net' item of $259,196.65).

The above total amount is made up as follows:

Freight revenue (transportation)	$9,509,077.33	
Miscellaneous freight earnings derived from switching, demurrage, storage, etc.	314,431.02	
Total freight earnings, including miscellaneous		$9,823,508.35
Total passenger revenue (transportation of persons)	$2,955,868.51	
Miscellaneous passenger earnings consisting of mail, express, etc.	556,670.01	
Total passenger earnings		$3,512,538.52
Total freight and passenger earnings		$13,336,046.87

Division Freight Earnings Between Intrastate and Interstate.

Total freight revenue, transportation:

Intrastate	$1,555,342.92	= 16.356%
Interstate	7,953,734.41	= 83.644%

Miscellaneous Freight Earnings Divided on Basis of Transportation Revenue.

Intrastate	$51,428.34	= 16.356%
Interstate	263,002.68	= 83.644%

Total freight earnings:

Intrastate	$1,606,771.26	= 16.356%
Interstate	8,216,737.09	= 83.644%
Total	$9,823,508.35	= 100%

Division Passenger Earnings Between Intrastate and Interstate.

Intrastate	$1,015,150.34	= 34.344%
Interstate	1,940,718.17	= 65.656%

Miscellaneous Passenger Earnings Divided on Basis of Transportation Revenue.

Intrastate	$191,182.75	= 34.344%
Interstate	365,487.26	= 65.656%

Total passenger earnings:

Intrastate	$1,206,333.09	= 34.344%
Interstate	2,306,205.43	= 65.656%
Total	$3,512,538.52	= 100%

In addition to the foregoing earnings there was derived from the use of property included in the foregoing valuation certain 'miscellaneous income net items' from outside operations (sleeping, parlor and dining cars, etc.), rental received for use of tracks, yards and other property and hire of equipment, amounting in the aggregate to $346,936.40 plus $13,336,046.87 equals $13,682,983.27. (Exhibit 80 B—Elliott.)

Operating Expenses.

Total operating expenses in Minnesota for said year (Exhibit 80 B—Elliott)	$7,655,350.20
Total taxes	596,118.51
Total	$8,251,468.71

(Exhibit 80 B—Elliott.)

Total net income derived from the use of Minnesota property, included in valuation,—gross earnings from all such sources, $13,682,983.27—less operating expenses and taxes $8,251,468.71, leaves $5,431,514.56, equals 6.021 per cent return of value.

Division of Operating Expenses Between Freight and Passenger.

Of the total operating expenses there was expended in the conduct of the freight business	$5,343,718.25
And in the conduct of the passenger business	2,311,631.95
Total	$7,655,350.20

(Exhibit 79, Elliott.)

Division of Freight Operating Expenses Between Intrastate and Interstate Freight.

The total freight operating expenses—$5,343,718.25 may be fairly and justly divided between the intrastate freight business and the interstate freight business, on either one of two bases:

1. The relation of the average intrastate ton mile cost to the average interstate ton mile cost—"equated Ton Mile Basis;" and

2. The relation of cost required to produce a given amount of revenue in the intrastate business compared with the cost required to produce the same amount of revenue in the interstate business—'Equated Revenue Basis.'

As hereinbefore found, during the said year, ending June 30, 1908, it cost said Company at least 2½ times as much on the average to produce a ton mile in the intrastate business as in the interstate business.

During said year the relation of revenue per ton per mile derived from the intrastate business was as 1.4387 is to 1.0000, and on the same rates and under like conditions such relation will hereafter continue to be substantially the same.

To divide the total freight operating expenses on the Equated Ton Mile Basis—the relation of cost per ton per mile of intrastate business to the cost per ton per mile of the interstate business being as 2½ is to 1—multiply the actual number of intrastate ton miles by 2½ and the product will be the number of intrastate ton miles which would have been produced by the expenditure which was actually made in the conduct of the intrastate freight business, if the production of a

ton mile in the intrastate business on the average had been attended by the same cost as the production of a ton mile in the interstate business on the average,—then add such product to the actual number of interstate ton miles, and the sum will be the total number of ton miles, both intrastate and interstate which would have been produced by the expenditure which was actually made in the conduct of both classes of business if the production of a ton mile in the intrastate business on the average had been attended by the same cost as the production of a ton mile in the interstate business on the average,—this total may be called the 'Equated Ton Miles.' For the intrastate operating expenses take such percentage of the total freight operating expenses as the number of ton miles so increased—or equated—is of the total number of equated ton miles, and for the interstate operating expenses take such per cent of the total operating expenses as the interstate ton miles is of the total equated ton miles.

To divide such total freight operating expenses on the Equated Revenue Basis, the relation of cost per ton per mile of the intrastate business to the cost per ton per mile of the interstate business, being as 2½ is to 1, and the relation of revenue per ton per mile derived from the interstate business, being as 1.4387 is to 1.0000, first determine what—on such facts—is the relation of cost per ton per mile in the intrastate business in proportion to revenue, to the cost per ton per mile in the interstate business in proportion to revenue. This may be done by dividing such ton mile relation by such revenue relation, as follows:

$$\frac{250}{100} \text{ divided by } \frac{1.4387}{1.0000} \text{ equals } \frac{1.7377}{1.0000}$$

It therefore appears that the production of a given amount of revenue in the intrastate freight business is attended with greater cost than the production of the same amount of revenue in the interstate freight business, and that such excess of cost is and will be at least 73.77 per cent.

To divide total freight operating expenses on the 'Equated Revenue Basis' in accordance with the facts in this case as above stated:

Increase the intrastate earnings by 73.77%, thereby showing what would have been earned by the same actual expenditure in the conduct of the intrastate business had it been attended with the same relative cost as the intrastate business. Then add the intrastate earnings, as so increased—or equated—to the interstate earnings, thereby ascertaining what would have been earned by the actual expenditure in conducting both intrastate and interstate traffic had the former been attended with the same relative cost as the latter. Then ascertain what proportion of this total represents the intrastate earnings as so increased—or equated—and what proportion represents the interstate earnings, and then ascertain the corresponding proportions of the total cost of the intrastate and interstate freight traffic, and the same will be the cost of intrastate freight business and interstate freight business respectively. (See 163 Fed. 141.)

The equated ton mile basis on the relation of 2½ to 1 is in this case exactly the same as the equated revenue basis on the relation of 1.7377 to 1.0000.

Applying either of these rules to the facts above stated, the total freight operating expenses—$5,343,718.25—is divided as follows:

Intrastate	$1,355,273.82	= 25.362%
Interstate	3,988,444.43	= 74.638%
	$5,343,718.25	= 100%

Division of Total Passenger Operating Expenses Between Intrastate Passenger and Interstate Passenger.

As hereinbefore stated, it is found that during said year it cost said Company to produce an intrastate passenger mile in said State 1.15 times as much as to produce an interstate passenger mile in said State.

The evidence shows that the average revenue per passenger mile in the intrastate business was $1.9404 (computed from 80 Elliott), and in the interstate business was 1.9228 (computed from 80 Elliott). The relation of such revenue, intrastate to interstate, is as 1.0092 to 1.0000. The relation of cost in proportion to revenue is:

$$\frac{115}{100} \div \frac{1.0092}{1.0000} = \frac{1.1395}{1.0000} \text{ or } 1.1395 \text{ to } 1.0000$$

Such total passenger operating expenses may fairly and justly be divided between the intrastate business and the interstate business on the 'Equated Passenger Mile Basis,' or the 'Equated Revenue Basis,' in like manner as that hereinbefore stated for the division of the freight operating expenses between the intrastate freight business and interstate freight business on the two similar bases heretofore explained.

The 'Equated Passenger Mile Basis,' on relation of cost per passenger mile intrastate to interstate, 1.15 to 1, is exactly the same as the 'Equated Revenue Basis' on the relation of 1.1395 to 1.0000.

Dividing the total passenger operating expenses, $2,311,631.95—100%—on either of such bases, there will be assigned to the intrastate passenger business $863,325.18—37.347%, and to the interstate passenger business $1,448,306.77—62.653%."

Illustrations in confirmation of the Master's finding that the "Equated Ton Mile Basis" used by him is the exact equivalent of the "Equated Revenue Basis" used by him.

To the end that there shall be no possibility of a misunderstanding of the methods and calculations employed by the Master, and because of a persistent failure on the part of the solicitors for the defendants at the trial in the Court below to approve the Master's arithmetical operations, we shall attempt by simple propositions and illustrations to elucidate the matter as follows:

(1) It is apparent that the following of either method for the division of the freight operating expenses between intrastate business and the interstate business produces precisely the same result as the following of the other.

Let us cite a portion of the Table of Results in the Northern Pacific Case attached to page 264 of volume 1, to-wit:

The total Minnesota freight operating expenses amounted to $5,343,718.25.

The division of the same between the two classes of business on the "Equated ton mile basis" is as follows:

On basis of one Intrastate ton mile costing as much as two and one-half Interstate ton miles.

	Actual.	Equated.	Proportion.	Operating Expenses.
Intra ton miles	130,580,988×2.5	=326,452,470	=25.362%	$1,355,273.82
Inter ton miles	960,709,494×1.0	=960,709,494	=74.638%	3,988,444.43
	1,091,290,482	1,287,161,964	=100%	$5,343,718.25

The same division on the "Equated Revenue Basis" is as follows:

Actual Revenue.	Equated Revenue.	
$1,555,342.92 × 1.7377	= $2,702,719.39	= 25.362%
7,953,734.41 × 1.	= 7,953,734.41	= 74.638%
	10,656,453.80 =	100%

It will be observed that the same percentage of the total is assigned to each class by either method.

(2) The method employed by the Master—the relation of *cost* per ton per mile and the relation of *revenue* per ton per mile of the intrastate business to the interstate business being given—to ascertain the relation of the *cost* of the *intrastate* business *in proportion to the revenue* derived therefrom to the *cost* of the interstate business *in proportion to the revenue* derived therefrom, may be demonstrated to be arithmetically correct as follows:

A.

The "operating percentage" (being the amount of the expenses to the amount of the revenue) is arrived at by dividing cost by revenue.

For example:

The revenue being $1,100,000, and cost being $600,000, the "operating percentage" is

$$\frac{600{,}000}{1{,}100{,}000} \text{ or } 54\tfrac{6}{11}\%.$$

If the revenue be decreased and the cost remain the same, or increased, the operating percentage will be increased. For example:

600,000 divided by 1,000,000 = 60%.

If the cost be decreased and the revenue remain the same the operating percentage will be decreased.

For example:

550,000 divided by 1,100,000 = 50%.

B.

If intrastate revenue per ton per mile, interstate revenue per ton per mile, and the total cost of both within the state, be given—assuming that cost in proportion to revenue is the same in both classes of business—the total cost may be divided on the "straight revenue basis" by taking such percentage of the total cost as the revenue of each class is to the total revenue of both.

For example:

Revenue, inter.	$1,000,000.00
Revenue, intra.	100,000.00
Total	$1,100,000.00
Cost of both	600,000.00
10/11 of $600,000	$545.454.55
1/11 of 600,000	54.545.45
Total	$600,000.00

(Simple fractions used instead of percentages for convenience.)

C.

If the cost of the intrastate business in proportion to revenue derived therefrom exceeds the cost of the interstate business in proportion to revenue derived therefrom (let us say 100 per cent., for example) first, equate revenue by increasing intrastate revenue by the percentage of such excess, and then for the cost of each take such percentage of the total cost as revenue (so equated) from each is to the total revenue so equated.

For example:

Revenue, inter	$1,000,000
Revenue, intra	100,000
Total	$1,100,000

Additional cost per unit intra revenue in proportion to revenue is 100% over corresponding cost of inter.

Operating expenses	$600,000

Equated Revenue.

Revenue, inter	$1,000,000 × 1 = $1,000,000
Revenue, intra, $100,000, increased 100% or multiplied by 2 =	200,000
Total (equated)	$1,200,000

Division of Cost on Equated Basis.

Total cost	$600,000
5/6 of $600,000, inter =	500,000
1/6 of $600,000, intra =	100,000

Net Revenue.

Inter net.....	($1,000,000 — $500,000) =	$500,000
Intra net.....	(100,000 — 100,000) =	0
Total		$500,000

Operating Percentages.

Inter.....	$500,000 ÷ $1,000,000 =	50. %
Intra	100,000 ÷ 100,000 =	100. %
Total	$600,000 ÷ $1,100,000 =	54.5%

D.

If there be given the intrastate ton miles, the interstate ton miles, and total cost of both—assuming that the average cost per ton per mile in the intrastate business is the same as the average cost per ton per mile in the interstate business—then total cost may be divided between the two classes of business on the "straight ton mile basis" as follows:

For example, assume:

Ton miles, inter.....	10,000,000
Ton miles, intra.....	1,000,000
Total	11,000,000
Total cost (assumed)	600,000

Then

Inter cost, 10/11 of 600,000.....	545,454.55
Intra cost, 1/11 of 600,000.....	54,545.45
Total	$600,000.00

E.

An example is found in Complainants' Exception XXIII, vol. 1, page 298 N. P. Case, which includes a table based upon the claim that it costs three times as much on the average to produce one ton mile in the

intrastate business as in the interstate business on the Northern Pacific road in Minnesota.

It will be observed that the total freight operating expense is $5,343,718.25; the intrastate ton miles are 130,580,988; the interstate ton miles are 960,709,494; total ton miles 1,091,290,482. A division of the operating expense on the "Equated ton mile basis" on these facts may be made as follows:

On basis of 1 intrastate ton mile costing as much as 3 interstate ton miles:

	Actual.	Equated.	Proportion.	Operating Expenses.
ntra ton miles..	130,580,988×3	=391,742,964	=28.965%	$1,547,807.99
nter ton miles..	960,709,494×1	=960,709,494	=71.035%	3,795,910.26
	1,091,290,482	1,352,452,458	=100%	$5,343,718.25

F.

Assume relation of intrastate cost per ton per mile to interstate cost per ton per mile is as 2½ to 1.

Assume relation of intrastate revenue per ton per mile to interstate revenue per ton per mile is also 2½ to 1.

Then relation of cost in proportion to intrastate revenue to cost in proportion to interstate revenue will be normal, arrived at as follows:

$$\frac{2.50}{1.00} \div \frac{2.50}{1.00} = \frac{1}{1} \text{ or 100 to 100}$$

If the above assumed cost relation per ton per mile be changed to 2 to 1 and the above assumed relation of revenue per ton per mile be changed to 1½ to 1 then:

$$\frac{2.00}{1.00} \div \frac{1.50}{1.00} = \frac{2.00}{1.50} = \frac{4}{3} \quad 1\tfrac{1}{3} \text{ to } 1 = 1.33^{+} \text{ to } 100$$

the cost in proportion to revenue intrastate to interstate.

G.

General Rule.

When there is given relation of cost per ton per mile intrastate to interstate and the relation of revenue per ton per mile intrastate to interstate, divide such cost relation by such revenue relation and the quotient will be the relation of intrastate cost in proportion to revenue derived therefrom to the interstate cost in proportion to the revenue derived therefrom.

If any two of the three relations above mentioned be given the other may be found.

This needs no illustration.

After dividing total freight operating expenses and total passenger operating expenses between intrastate and interstate business of each respectively, the Master continued his calculations as follows: (pages 263, 264 vol. 1 N. P. Case.)

6. *"Apportionment of Taxes to Various Classes of Business.*

The total taxes and assessments paid in Minnesota by said Company in said year amounted to $596,118.51. Such sum may be fairly and justly apportioned to the various classes of business on the gross earnings basis as follows:

Intrastate freight	$ 71,820.32
Interstate freight	367,286.53
Intrastate passenger	53,924.08
Interstate passenger	103,087.58
	596,118.51

7. Apportionment of Other Income to Various Classes of Business on the Gross Earnings Basis.

During said year the Company received for 'Rentals' and for 'Hire of Equipment' over and above amounts paid on account thereof in Minnesota, $259,196.65, which amount may justly and fairly be distributed between the various classes of business, on the gross earnings basis.

In addition to the last mentioned sum, there was received from 'Cutside Operations' (consisting of sleeping, dining, chair and parlor cars, etc.), $87,739.75, which may fairly and justly be divided between the intrastate passenger business and the interstate passenger business on the passenger earning basis.

On account of the two items last mentioned there should be added to the earnings derived from each class of business the following sums:

Intrastate freight	$31,227.99
Interstate freight	159,698.85
Total	$190,926.84
Intrastate passenger	53,579.92
Interstate passenger	102,429.64
Total	$156,009.56

(See Exhibit 80 B, Elliott).

8. *Net Income Applicable to Return Upon Valuation of Property Apportioned to the Various Classes of Business.*

If from such total receipts so assigned to each class of intrastate business as hereinbefore stated, there be deducted the sum of the operating expenses and taxes so assigned to each such class of intrastate business, we have the following results:

Intrastate net freight income $210,905.11 yields sufficient for an annual return on $10,867,837 of only 1.941%.

Note:—The losses which would have resulted from the application of the commodity rates enjoined have not been deducted. From Exhibit 63—Johnson, it is estimated that the intrastate freight earnings in Minnesota would have been reduced in said year by the application of such rates $21,493.67, which would effect a reduction in the rate of return last mentioned.

Intrastate passenger income $342,663.75 sufficient to yield an annual return upon $8,159,782 of only 4.2%.

Total intrastate (freight and passenger) income, $553.568.86, sufficient to yield an annual return on $19,027,619 (total valuation assigned to all intrastate business) of only 2.909%.

The foregoing data, deductions and results are included in or deducible from the table following:"

(Here follows table attached to page 264 of vol. 1, N. P. Case, which will be found *infra*, Sub-Section VII of this brief.)

At page 265 vol. 1, it is shown that if valuation of property be divided to the different classes of business on the operating expense basis, the results will be more favorable to the complainants.

Great Northern Case.

In the Great Northern case the Master followed the same method and form of calculation as in the Northern Pacific case. At page 270, Vol. 1 N. P. Case, his results are stated as follows:

> **"Net Income Applicable to Return upon Valuation of Property Apportioned to the Various Classes of Business.**
>
> If from such total receipts so assigned to each class of intrastate business as hereinbefore stated there be deducted the sum of the operating expenses and taxes so assigned to each such class of intrastate business, we have the following results:
>
> Intrastate freight, income, $898,997.81, sufficient to yield an annual return on $16,442,200 of only 5.468%.
>
> Note:—The losses which would have resulted from the application of the commodity rates enjoined have not been deducted. The same are shown by Exhibit 22—Parker to be $87,261.43 (and by Exhibit G Hillman, Table 11, $129,852.53.) Deducting the amount shown by Complainants—$87,261.43—less 4% taxes —$3,490.46—leaves a net deduction $83,770.97, which substracted from net intrastate freight income as above stated, $898,997.81, would leave $815,226.84, sufficient to yield an annual return on the value above stated (valuation not reapportioned on account of change in revenue) of *4.958%*. And if the amount of such losses as estimated by the defendants be taken, the rate of return would be less than the figure last stated.

Intrastate passenger income $131,804.37 is sufficient to yield an annual return upon $14,243,633 of only 0.925%.

Total intrastate (freight and passenger income (estimated commodity losses not deducted), $1,030,802.18 is sufficient to yield an annual return on $30,685,833 (total valuation assigned to all intrastate business) of only *3.359%*.

Deducting the commodity losses, less the taxes, as estimated by complainants as aforesaid, the total intrastate (freight and passenger) income would be sufficient to yield an annual return on total value assigned to all intrastate business of only 3.086%.

The foregoing data, deductions and results are included in or deducible from the table following:"

(Then follows table attached to page 270 vol. 1, N. P. Case, which will be found *infra*, Sub-Section VII of this brief.)

At page 271 vol. 1, it is shown that if property valuation be divided to the different classes of business on the operating expense basis, the results will be more favorable to the complainants.

And it also appears that if there be subtracted from the intrastate freight revenue the loss which would have resulted if the commodity acts had been in effect, the rate of return on the intrastate freight business would have been *4.937%*.

Minneapolis & St. Louis Case.

In the Minneapolis and St. Louis case, the Master followed the same method of calculation (though not expressed in tabular form) as in the other cases. He divided the freight operating expenses and the pas-

senger operating expenses on the straight revenue basis, and although he showed there was a factor of extra cost, he did not take it into account in making his calculations.

He said (at page 280, vol. 1, N. P. Case):

> "Dividing the freight operating expenses and the passenger operating expenses of Minnesota between intrastate and interstate business, respectively, on the straight revenue basis, as aforesaid, does not assign to either class of such intrastate business the full amount of operating expenses which was actually expended in the conduct thereof; and consequently the rates of return on value *2.93%* for intrastate freight and *1.79%* for intrastate passenger, and *2.47%* for total intrastate—freight and passenger—*are in excess* of the actual returns respectively which would have been earned if the rates complained of had been in effect during the whole of such fiscal year.

CONFISCATION FOUND.

It appears from the foregoing facts, in these three cases and the Master finds that for the two years next prior to July 1, 1908, in these three cases the revenue derived by the said defendant railway companies and each of them from the property thereof devoted to the public use in the operation of their respective lines of railway and the conduct of their business as common carriers of passengers and freight within and local to the State of Minnesota, were and that they still are inadequate and insufficient compensation for the property so used and the service rendered, and that the aforesaid rates prescribed by the Orders of the Railroad & Warehouse Commission and the Acts of the legislature were and still are unreasonably low, unjust and confiscatory, and in the immediate future and until there shall

be very material changes in existing conditions not likely soon to occur, they will continue so to be, and that the enforcement of said orders and acts should be enjoined and restrained, as well because they are unreasonably low and confiscatory as because they constitute a burden upon and an interference with and a regulation of interstate commerce, as has been hereinbefore found and determined."

Recapitulation of Results on Intrastate Business.

The rates of return found by the Master on the *revenue actually received* in 1908 in the Northern Pacific and Great Northern cases, and in 1907 the Minneapolis and St. Louis case, if the rates complained of had been in effect during all of that year, are as follows:

	Total Intrastate	Intra. Freight	Intra. Passenger
Northern Pacific	2.909%	1.941%	4.2%
Great Northern	3.359	5.468	0.925
Mpls. & St. Louis	2.47	2.05	1.79

If the commodity rates complained of had been in effect the rates of return as found by the Master in the Great Northern and Northern Pacific cases on intrastate freight would have been less.

For example, on the Great Northern it would have been 4.937%.

V.

These Companies Are Entitled to a Fair Return Upon the Value of the Property Used to Render the Service Covered By the Rates Complained of.

The Master in Subdivision VI of his report, at page 218, Vol. 1, N. P. Case, stated that "no condi-

tions exist in these cases to take them out of the general rule."

In Subdivision XI, page 244, Vol. 1, N. P. Case, the Master says:

> "Roads Constructed and Maintained Pursuant to Public Demand.
>
> It is true of these lines of railway that they are efficiently, economically and honestly managed; that they have been located and constructed pursuant to a public demand and that the public rather than dispense with the service of any of them can well afford and will gladly pay such rates as will produce a full and fair return on cost of their reproduction—such return as others engaged in business of similar character and of like hazards and uncertainties are accustomed to receive, and rates sufficiently high for such purpose would not be burdensome, unjust or unreasonable.
>
> Abandonment of either of these roads would be a great public calamity, and if we could conceive of their being suddenly obliterated, their immediate reconstruction would follow in response to the public necessity, which shows that they must be worth what it would cost to reproduce them and that a return based on such cost will not be oppressive." * * *

VI.

Rate of Return.

In Subdivision XV of his report the Master said, (vol. 1, N. P. 251):

> "Reasonable Return.
>
> "Having made the foregoing distribution of property valuations, the question is, What return are the companies respectively entitled to

receive thereon without legislative interference for the protection of the public?

It has been found that a full and fair return, such as is derived from investments in like kinds of business and subject to like conditions, would not compel the public served to pay an unjust or burdensome rate.

It follows, therefore, that such valuation is as much an element of rate-making and is entitled to the same consideration as are the operating expenses of the company. The theory that is entitled to some return, the amount thereof to be adjusted by the legislature regardless of property values devoted to the public service, must be rejected. Any rate which will not produce a full and fair return is unreasonable, and is confiscatory to the extent that it comes short of producing such return, and is a taking of property from the carrier class and giving it to the persons served without compensation.

What is a just return? One of the most fair-minded and intelligent witnesses before the Master; one who from his long official experience and efficient service had necessarily given the matter very careful consideration, was of the opinion that the carrier should be assured an average annual return of seven per cent on a fair valuation of its property. The Master concurs in this view.

(The witness here referred to is Mr. Chas. F. Staples, a member of the Railroad and Warehouse Commission, and one of the appellants herein.)

Having in mind the nature of the business, its fluctuations from year to year due to extremes of weather and varying crop conditions the fact that operations can never be suspended, but in times of adversity as well as of prosperity the carrier must be ready to serve or forfeit its property devoted to the public

service, and that competition is ever present and increasing, it would seem that the return here suggested would be the minimum when compared with returns from other kinds of business not subject to such conditions.

It must be remembered also that the public demands and is able and willing to pay for a service of the highest efficiency, requiring able and skillful management. The continued prosperity of the country depends upon it, and the returns from such undertakings should be sufficiently adequate to encourage the investment of ample capital for their successful prosecution.

In Wilcox v. Consolidated Gas Co., 212 U. S. 19, the question as to the reasonableness of the rates prescribed by the state of New York for the defendant company within the city of New York was before the Court for its determination. After making some general observations as to what compensation public service corporations would, under varying conditions, be entitled to receive. The Court uses the following language:

'In an investment in a gas company, such as complainant's, the risk is reduced almost to a minimum. It is a corporation, which in fact, as the court below remarks, monopolizes the gas service of the largest city in America, and is secure against competition under the circumstances in which it is placed, because it is a proposition almost unthinkable that the city of New York would, for purposes of making competition permit the streets of the city to be again torn up in order to allow the mains of another company to be laid all through them to supply gas which the present company can adequately supply. And, so far as it is given us to look into the future, it seems as certain as anything of such a nature can be, that the demand for gas will increase, and, at the reduced price, increase

to a considerable extent. An interest in such a business is as near a safe and secure investment as can be imagined with regard to any private manufacturing business, although it is recognized at the same time that there is a possible element of risk, even in such a business. The court below regarded it as the most favorably situated gas business in America, and added that all gas business is inherently subject to many of the vicissitudes of manufacturing. Under the circumstances, the court held that a rate which would permit a return of six per cent would be enough to avoid the charge of confiscation, and for the reason that a return of such an amount was the return ordinarily sought and obtained on investments of that degree of safety in the city of New York.

Taking all facts into consideration, we concur with the court below on this question, and think complainant is entitled to six per cent on the fair value of its property devoted to the public use.'

If a gas company under the conditions there disclosed, with an assured revenue beyond all reasonable probability of hazard, was entitled to six per cent net return on the value of its property devoted to the public use, a finding that in these cases companies are entitled to seven per cent net return on such valuation after allowing for all necessary repairs and replacements is certainly conservative and does no injustice to the public.

Few businesses are so free from hazard as that of national banks, and the evidence discloses that the average results of their business for thirty-eight years ending with 1907 show net annual earnings to capital and surplus of 8.58 per cent, and for the period from March 1, 1897, to June 30, 1907, of 9.84 per cent.

The Master determines that under the conditions disclosed in these cases the companies are

entitled to a net return of seven per cent upon the value of their property as herein found."

In the opinion of the Circuit Court (at page 431-2 Vol., 1 N. P.) the subject of the rate of return is discussed. In conclusion it is said:

> "It is an axiom in economics that the greater the risk the greater must the return be upon invested capital, and the conclusion is irresistible that a net return of *7 per cent* per annum upon the respective values of the properties of these companies in Minnesota devoted to transportation *is not more* than the fair return to which they are entitled under the Constitution of the United States."

The assignments of error on this branch of the case, that is, that the rates complained of are, and that each of them is, confiscatory and void because in violation of the 14th Amendment to the Constitution of the United States may be discussed in the following:

ORDER OF ARGUMENT.

I.

Value of Property of Each Company in Minnesota Used in Its Transportation Business.

Legal Principles—Methods of Ascertainment.

II.

Minnesota Gross Earnings of Each Company, and Apportionments Thereof.

III.

Minnesota Operating Expenses and Taxes of Each Company, and Apportionments Thereof and Net Earnings.

IV.

Apportionment of the Value of the Property of Each Company in Minnesota to Its Various Classes of Business.

V.

These Companies Are Entitled to a Fair Return on Present Value of the Property Used to Render the Services Covered by the Rates.

The Value of the Services Rendered the Public Is Greater Than the Rates Therefor Which Were in Effect Immediately Before the Making of the Orders and Laws Complained of.

VI.

A Rate of Return, to Be Reasonably Adequate, Must Be Higher Than Seven Per Cent on the Value of the Property Used, and at the Time it Is Used, to Render the Services Covered by the Rates.

VII.

The Rates Complained of Are Confiscatory.

I.

Value of Property of Each Company in Minnesota Used in Its Transportation Business.

Legal Principles—Methods of Ascertainment.

The assignments of error in this Court upon this branch of the case challenge the correctness of certain of the methods adopted and factors employed in the Court below in finding the facts and making the necessary computations.

In natural order, the present value of the properties was first ascertained by the Master and determined by the Court.

Assignments of error (Subdivision II, Nos. 1 to 9, Vol. 1, N. P., pp. 445-6) fairly summarized assert the following propositions:

(1) The basis of value of the property employed in the public service is the original cost increased only by additional capital invested in permanent improvements and additions to the property.

(2) Increase in value arising through enhanced values of land, roadbed or structures, or through additions and betterments provided out of surplus income derived from earnings may not be considered.

(3) The lower Court erred (as it is claimed) in determining present value solely upon the basis of present cost of reproduction to the exclusion of other evidence such as original cost and amount and market value of outstanding stocks and bonds.

These assignments of error are designed apparently to bring broadly under review the proper principles and

methods to be followed in ascertaining the present values of these properties and therefore require a consideration of the record, Master's Report and opinion of the Circuit Court in some detail. They also make it desirable to state at the outset the principles of law that govern the questions under consideration and to briefly examine some of the decisions of the courts which have established these principles.

PRINCIPLES OF LAW.

(1) Railroad corporations are persons within the meaning of the Fourteenth Amendment, declaring that no state shall deprive any person of property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

Santa Clara County v. Southern Pacific R. R. Co., 118 U. S., 394, 396;
Minneapolis & St. Louis Ry. Co. v. Beckwith, 129 U. S. 26;
Charlotte & Columbia R. R. Co. v. Gibbes, 142 U. S. 391;
Gulf, Colorado & Santa Fe Ry. Co. v. Ellis, 165 U. S. 150, 154;
Reagan v. Farmers Loan & Trust Co., 154 U. S. 362, 399, 410;
Smyth v. Ames, 169 U. S. 522.

In *Gulf, Colorado & Santa Fe Ry. Co. v. Ellis*, 165 U. S. 150, 154, this Court said:

> "It is well settled that corporations are persons within the provisions of the Fourteenth Amendment of the Constitution of the United States. *Santa Clara County v. Southern Pacific Railroad*, 118 U. S. 394; *Pembina Mining Co. v. Pennsyl-*

vania, 125 U. S. 181, 189; *Missouri Pacific Railway v. Mackey*, 127 U. S. 205; *Minneapolis & St. Louis Railway v. Herrick*, 127 U. S. 210; *Minneapolis & St. Louis Railway v. Beckwith*, 129 U. S. 26; *Charlotte & Columbia Railroad v. Gibbes*, 142 U. S. 386; *Covington & Lexington Turnpike Company v. Sandford*, 164 U. S. 578. The rights and securities guaranteed to persons by that instrument cannot be disregarded in respect to these artificial entities called corporations any more than they can be in respect to the individuals who are the equitable owners of the property belonging to such corporations. A state has no more power to deny to corporations the equal protection of the law than it has to individual citizens."

(2) Railroad property is private property, subject to public use under just regulations.

Railroad Commission Cases, 116 U. S. 307, 331;
C. M. & St. P. Ry. Co. v. Minnesota, 134 U. S. 418, 458;
Reagan v. Farmers Loan & Trust Co., 154 U. S. 362, 399, 410;
Interstate Commerce Commission v. C. G. W. Ry. Co., 209 U. S. 108.

In *I. C. Commission v. Chicago Great Western Ry. Co., supra*, this Court said:

"It must be remembered that railroads are the private property of their owners; that while from the public character of the work in which they are engaged the public has the power to prescribe rules for securing faithful and efficient service and equality between shippers and communities, yet in no proper sense is the public a general manager."

Being private property thus protected, it is subject to the incidents affecting all private property. It is subject to the burdens, including the hazard of loss and entitled to the benefits that make for increase in value, arising through successful administration.

(a) Railroad property in this country is usually taxed upon the ad valorem basis. In Minnesota, there is the gross earnings tax of a fixed percentage of all earnings within the state. (Rev. Laws Minn. 1909, Sec. 1003.) In the first instance the value taxed is the current present value, expressed in various forms of statutory language. For instance, as the "true cash value" (*P. C. & St. L. Ry. v. Backus*, 154 U. S. 421) the "true value" (*Adams Express Co. v. Ohio*, 165 U. S. 194), or "a just valuation" (*Charlotte, etc., R. R. Co. v. Gibbes*, 142 U. S. 386).

In Iowa (Sec. 1336, Code, 1897, Vol. 1) "said property shall be valued at its actual value." In Wisconsin (Wis. Stat. Chap. 51) railroad property is defined to include every kind of property real and personal used or employed and (Sec. 1215-7) is required to be assessed at the "true cash value" and (Sec. 1215-14) at the average rate of taxation upon the general property of the state. In North Dakota, the franchise, roadway, etc., are required to be assessed at its actual value (No. Dak. Laws 1905, Sec. 1313) and by Sec. 1207 this is defined to mean its "true and full value in money." Similar statutes in South Dakota require assessment of railroad property "in the same ratio as that of the property of individuals" (Stat. So. Dak. Sec. 2116) and in Montana the "full cash value" is the basis (Montana Rev. Codes, Sec. 3502, 2557).

Every constitutional or statutory requirement for taxation upon basis of value includes the whole property and (with certain exceptions affecting granted lands in certain states) excludes the possibility of a segregation of property between that acquired or created out of capital and that derived from natural increase, public or private grant or the re-investment of surplus income into additions or betterments. The whole property from whatever source derived is subject to taxation at present value. (*State Railroad Tax Cases*, 92 U. S. 602, 605.)

Laws governing taxation require uniformity within proper limits of classification and it would inevitably follow that an omission to tax the value of that portion of the property created, for instance by re-investment of income, would amount to an unlawful discrimination in favor of the railroad corporation and against all others of the same class. It would be such an undervaluation of property as to amount to fraud and give ground for injunctive relief to those of the class against whom the discrimination arose.

Raymond v. Chicago Traction Co., 207 U. S. 20, 36;
Louisville Trust Co. v. Stone, 107 Fed. 305;
A. T. & S. F. Ry. Co. v. Sullivan, 173 Fed. 456, 461.

In the second instance, a tax upon gross earnings is a commuted tax upon the whole property used in transportation service from whatsoever source derived. To the extent that value has been created by means other than direct investment of capital and that value produces gross earnings, it is taxed by the percentage of all gross earnings taken by the state.

In the case of *Wright v. Georgia R. R. & Banking Co.*, 216 U. S. 420, there was a provision in the statutory charter of the company levying an annual tax upon the net income in lieu of any form of ad valorem tax upon the property. It appeared that the original capital had been $4,156,000 and that in process of time the value had increased $4,000,000 by "the result of natural increase in the value of said property and by renewals, alterations and betterments of the same, from time to time, by said company." The company had been granted no power to issue bonds (p. 431) and it fairly appeared that the increase in value was the result of natural increase and the betterment of the property by re-investment of income (p. 430). Effort had been made to assess an ad valorem tax upon this increase in value. The Court held that the net income tax covered the net income from the *whole property*, not only that created by the original capital of $4, 156,000, but also that embraced within the increased value, and that no other form of taxation was permissable under the charter.

The opinion held:

> "From the plain purpose that this authorized capital should be adequate to the construction and equipment of a particular railroad, it is plainly inferable that that railroad should be subject, after a time of complete immunity, only to a tax upon the profit of its operation. That railroad is the product of the investment of the authorized capital, and is, as such, subject only to a tax based upon its 'net proceeds.' This plan of tax upon net earnings is quite inconsistent with any other form of taxation, and is absolutely independent of any question as to whether the property thus taxed only upon its profits should have

a less or greater value than the capital invested. A tax upon earnings is a tax which at last covers and includes, unless double taxation is intended, all property necessarily held and used to make that income, including the enjoyment of its franchises. It is not to be presumed, in the light of the public policy of the time, that the State intended that this pioneer railroad should be subjected to any form of taxation of property which produced the taxable income. *State of Georgia v. Atlantic and Gulf R. R. Co.*, 60 Georgia, 268.

We are, therefore, of opinion that this property is not subject to any other method of taxation than that of the special system stipulated for by the contract, and that the act of the Georgia legislature, in so far as it provides for an ad valorem tax upon any part of this invested capital of the Georgia Railroad and Banking Company, does impair the obligation of the contract."

The plain import of this conclusion, although based in the particular case upon a local statutory contract, is that the whole property from whatsoever source derived, was embraced within the capital investment of the Company and the current net income from the use of the entire property was subject to the tax provided for in the charter.

So it follows by universal law and by universal interpretation by the Courts and public authorities administering tax laws that the present value of the whole property from whatsoever source derived is located in the ownership of the corporation and assessed against it for taxation. An exhibit later in the brief shows the increasing extent to which the right of taxing railroad property has been exercised.

(b) Railroad property is subject to condemnation for higher public necessity, equally and upon the same

rules for payment of just compensation as other private property.

In *Reagan v. Farmers Loan & Trust Company, supra,* this Court said (p. 410):

> "If the state were to seek to acquire the title to these roads, under its power of eminent domain, is there any doubt that constitutional provisions would require the payment to the corporation of just compensation, that compensation being the value of the property as it stood in the markets of the world, and not as prescribed by an act of the legislature? Is it any less a departure from the obligations of justice to seek to take not the title but the use for the public benefit at less than its market value?"

To the same effect, Mr. Justice Brewer at Circuit in *Ames v. Union Pacific Ry. Co.* (64 Fed. 165):

> "Property invested in railroads is as much protected from public appropriation as any other. If taken for public uses, its value must be paid for. Constitutional guaranties, to this extent, are explicit; and in such condemnation proceedings no inquiry is permitted as to how the owners have acquired the property, provided only it be legally held by them.
>
> * * * * * *
>
> No inquiry is open as to whether the owner has received gifts from state or individuals, or whether he has, as owner, managed the property well or ill, or so as to acquire a large fortune therefrom. It is enough that he owns the property,—has the legal title; and so owning, he must be paid the actual value of the property.
>
> * * * * * *
>
> These propositions in respect to condemnation proceedings are so well settled that no one ever questions them."

(These considerations are further discussed below, sub-title "Cost of Reproduction of Lands and Terminal Grounds.")

(c) The hazards affecting railroad property inhere in the fact that while in a measure it performs a function of the State, there is no guaranty against loss. If the investment was unwise or causes arise that impair it or its earning power, the property must nevertheless be renewed and continuously operated in the public service. If through failure in the volume of traffic, the building of parallel and competing roads or inability at rates just to the public to produce an adequate income, the enterprise becomes unsuccessful, its value is impaired and to that extent, the property is lost.

See testimony James J. Hill (Vol. 3 G. N. pp 1318, 1341).

In *Reagan v. Farmers' Loan & Trust Co., supra,* the Court said (p. 409):

> "They who invest their money in railroads take the same chances that men engaged in other business do of making profit from the carrying on of their business; and as appears from other cases submitted to us with this, some of the railroads in the State of Texas have been operated at a constant loss. But such possibilities of loss are simply the natural results of all business freely carried on, against which the law is powerless to afford protection. Very different are the considerations which arise when the strong arm of the law is invoked to compel parties engaged in legitimate business, and business which cannot be abandoned at will, to so reduce their charges for service as to make the carrying on of that business result in a continued loss. In the one case

the law is powerless to prevent injury; in the other it is used to work injury."

(d) The right to increase in value inheres in the very terms of the constitutional guaranties against the taking of property or property rights without due process of law and that afford to every owner of private property the equal protection of the laws.

(e) Public grants of lands to railroad companies in Minnesota constitute contracts based upon valuable considerations, namely, the undertaking to construct and operate and the inducement to capital to embark upon what otherwise probably would be for a long period of years, an unprofitable undertaking.

First Div. St. Paul & Pac. R. Co. v. Parcher, 14 Minn., 297;
City of St. Paul v. St. Paul & Sioux City Ry. Co., 23 Minn. 469;
State vs. Winona & St. Peter R. R. Co., 21 Minn. 472;
M. & St. L. R. R. Co. v. Koerner, 85 Minn. 149;
Northern Pacific Ry. Co. v. Townsend, 190 U. S. 267.

(f) Income derived from the public through rates charged for services rendered belongs to the owners of the property. Under laws requiring publication of charges, the amounts thereof must be collected and are prima facie reasonable. Such amount as remains after payment of all expenses and fixed charges is subject to distribution and, if in whole or in part, it is retained and reinvested in improvements or additional property for public service, the value thus created and

the use of it is property no less protected from public appropriation without just reward than those parts of the property to which it has been applied or added.

Willcox v. Consolidated Gas Co., 212 U. S. 19;
Brymer v. Butler Water Co., 179 Pa. 331, 36 Atl. Rep. 249.

Fee Title as distinguished from Easement for Railroad Purposes.

In considering the correct view to be taken of the nature of the ownership in right-of-way lands, certain assignments of error (1 N. P., p. 446, Assignment of Errors, Sub. II No. 4) should be noticed.

It is not necessary to determine the ultimate character of the title secured by railroad corporations in their right-of-way lands whether granted, purchased or condemned. If in fact the title be only an easement for purposes of operation, it is for every practical purpose, perpetual in character. The value of the remainder, if such, or reversion in the adjoining land owner may be measured by contrast with the exclusive character of the use by the railroad of the right-of-way. Excepting for proper purposes of crossing, the railroad use excludes all others and by universal law, it is a trespass to encroach upon it.

In Minnesota, no abandonment or change of line is permitted except upon hearing and permission of the Railroad & Warehouse Commission (Minn. Rev. Stat. 1909, Sec. 2038-9) and this is the ordinary rule. It follows, therefore, that in an issue determining

present value, the present use of right of way lands as well as that for the indefinite future, is the full and exclusive use of the lands and a discussion of a difference in value between a so-called easement and the fee title in such an issue becomes merely academic.

Western Union Tel. Co. v. Pa. R. R. Co., 195 U. S. 540, 570;
New Mexico v. U. S. Trust Co., 172 U. S. 171, 183, and cases cited.
Northern Pacific Ry. Co. v. Townsend, 190 U. S. 267.

In so far as the Northern Pacific right of way lands that were the subject of the grant in the Act of July 2, 1864 (13 Stat. 365) are concerned this Court said in *Northern Pacific Ry. v. Townsend*, 190 U. S. 267, 271:

> "Following decisions of this Court construing grants of rights of way similar in tenor to the grant now being considered, *New Mexico v. United States Trust Co.*, 172 U. S. 171, 181; *St. Joseph & Denver City R. R. Co. v. Baldwin*, 103 U. S. 426, it must be held that the fee passed by the grant made in Section 2 of the Act of July 2, 1864."

In *Western Union Telegraph Co. v. Pa. R. R. Co. supra*, this Court said:

> "A railroad right of way is a very substantial thing. It is more than a mere right of passage. It is more than an easement. We discussed its character in *New Mexico v. United States Trust Co.*, 172 U. S. 171. We there said (p. 183), that if a railroad's right of way was an easement

it was 'one having the attributes of the fee, perpetuity and exclusive use and possession; also the remedies of the fee, and, like it corporeal, not incorporeal, property.'"

And again:

"A railroad's right of way has, therefore, the substantiality of the fee, and it is private property even to the public in all else but in interest and benefit in its uses. It cannot be invaded without guilt of trespass. It cannot be appropriated in whole or part except upon the payment of compensation. In other words, it is entitled to the protection of the Constitution, and in the precise manner in which protection is given. It can only be taken by the exercise of the powers of eminent domain, and a condition precedent to the exercise of such power is, we said, in *Sweet v. Rechel*, that the statute conferring it make provision for reasonable compensation to the owner of the property taken. This condition is expressed with even more emphasis in *Cherokee Nation v. Southern Kansas Ry. Co., supra.*"

In *Chicago, Burlington & Quincy R. R. Co. v. Chicago*, 166 U. S. 226, 249, where there was an issue to determine just compensation for the condemnation of a street crossing over a right-of-way, it was held that the jury could not properly have taken into consideration the possibility that at some future time the company would take up its tracks and use or sell the land for purposes other than for a right of way. "Such a possibility was too remote and contingent to have been taken into account. There was nothing in the evidence, introduced or offered and excluded, suggesting any probability that the company intended

to use or would in the near future use the land within the crossing for any other purpose than as a right of way."

If this assignment of error is intended to suggest that the present value of a railroad easement is appreciably less than the value of the full title, the difference in value may not be measured by any rules applicable to the present issues. To attempt it would be to turn to "mere possible or imaginary uses, or the speculative schemes of its proprietor."

See also:

Boom Co. v. Patterson, 98 U. S. 403, 408;
Pierce on Railroads, 217;
Worcester v. Great Falls Mnfg. Co., 41 Maine, 159, 164;
Dorlan v. East B. & W. R. R., 46 Penn. St. 520, 525.

(3) Laws or orders made by public authority establishing rates for the transportation of persons or property that will not admit of a railroad company earning such compensation as under all the circumstances is just to it and to the public, deprive such company of its property without due process of law and deny to it the equal protection of the laws.

In *Reagan v. Farmers' Loan & Trust Co, supra*, this Court said:

> "These cases all support the proposition that while it is not the province of the courts to enter upon the merely administrative duty of framing a tariff of rates for carriage, it is within the scope of judicial power and a part of judicial duty to restrain anything which, in the form of a regulation of rates, operates to deny to the owners

of property invested in the business of transportation that equal protection which is the constitutional right of all owners of other property. There is nothing new or strange in this. It has always been a part of the judicial function to determine whether the act of one party (whether that party be a single individual, an organized body or the public as a whole) operates to divest the other party of any rights of person or property. In every constitution is the guarantee against the taking of private property for public purposes without just compensation. The equal protection of the laws which, by the Fourteenth Amendment, no State can deny to the individual, forbids legislation, in whatever form it may be enacted, by which the property of one individual is, without compensation, wrested from him for the benefit of another, or of the public. This, as has been often observed, is a government of law, and not a government of men, and it must never be forgotten that under such a government, with its constitutional limitations and guarantees, the forms of law and the machinery of government, with all their reach and power, must in their actual workings stop on the hither side of the unnecessary and uncompensated taking or destruction of any private property, legally acquired and legally held. It was, therefore, within the competency of the Circuit Court of the United States for the Western District of Texas, at the instance of the plaintiff, a citizen of another State, to enter upon an inquiry as to the reasonableness and justice of the rates prescribed by the railroad commission. Indeed it was in so doing only exercising a power expressly named in the act creating the commission."

(4) There must be a fair return upon the reasonable value of the property at the time it is being used for the public, unless (in exceptional cases) the en-

forcement of rates necessary for that purpose would be unjust to the public.

Authorities supra:

Stanislaus County v. San Joaquin Canal & Irrigation Co., 192 U. S. 201;
San Diego Land & Town Co. v. Jasper, 189 U. S. 439;
San Diego Land & Town Co. v. National City, 174 U. S. 739;
City of Knoxville v. Knoxville Water Co., 212 U. S. 1.
Willcox v. Consolidated Gas Co., 212 U. S. 19;
Missouri, Kansas & Texas Ry. Co. v. Love, 177 Fed. 493;
Shepard v. Northern Pacific Ry. Co., 184 Fed. 765;
Consolidated Gas Co. v. City of New York, 157 Fed. 849, 855.

In *Smyth v. Ames, supra*, this Court, after a review of previous decisions, laid down the following principles as settled:

"1. A railroad corporation is a person within the meaning of the Fourteenth Amendment, declaring that no State shall deprive any person of property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

2. A state enactment, or regulations made under the authority of a state enactment, establishing rates for the transportation of persons or property by railroad that will not admit of the carrier earning such compensation as under all the circumstances is just to it and to the public, would deprive such carrier of its property without due process of law and deny to it the equal protection

of the laws, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

3. While rates for the transportation of persons and property within the limits of a State are primarily for its determination, the question whether they are so unreasonably low as to deprive the carrier of its property without such compensation as the Constitution secures, and therefore without due process of law, cannot be so conclusively determined by the Legislature of the State or by regulations adopted under its authority, that the matter may not become the subject of judicial inquiry."

In that case the present tense used in the language of the Court above quoted indicates that present value of the property was under consideration and was the basis adopted.

In view of the leading character of *Smyth v. Ames* as an authority that has been uniformly followed in all subsequent cases, it will be profitable to look briefly into some of the conditions and arguments upon which the final decision rests.

The case arose in the Circuit Court for the District of Nebraska, and was brought by certain stockholders of different companies against the companies and officials of the State of Nebraska, constituting its Board of Transportation, for an injunction to restrain the operation of an Act of the Legislature of the State of Nebraska, reducing freight rates in that state an average of 29½ per cent. The case was heard at Circuit before Mr. Justice Brewer and Mr. District Judge Dundy, the former writing the opinion in 64 Fed. 165.

The value of the roads in Nebraska was one of the necessary and important elements for determination and it appears that the cost of reproduction of the physical properties was urged by those representing the State as presenting the true basis for a determination of value; it also appears that the amount of outstanding stocks and bonds was urged by those representing the carriers as the minimum basis of value that the Court should entertain. There was thus an issue before the Court over the proper basis of determining the capital sum to which net earnings should be applied in order to ascertain whether the return was or was not reasonable or adequate within the meaning of the constitutional guaranty.

This issue found its way into this Court.

In passing it may be noted that counsel for the State in his brief (169 U. S. 486, 489) argued as his sixth point "that the present value of the roads, as measured by the cost of reproduction, is the basis upon which profit should be computed." He further argued that the amount of stock or bonds could not be regarded as material nor could the rights of the public to just and reasonable rates be fixed or determined by such considerations. He advanced the proposition "that railroads should be placed upon the same footing as ordinary business enterprises," and, finally, that the rates fixed by the statutes under consideration "allow to the railroads of Nebraska a reasonable profit upon the present value of the roads."

It was also argued for the State, that the entire business of the company, passenger and freight, interstate and domestic, must be considered before it could

be held that the rates upon freight locally within the State of Nebraska could be said to be confiscatory.

Answering this argument, the Court said:

"In our judgment, it must be held that the reasonableness or unreasonableness of rates prescribed by a State for the transportation of persons and property wholly within its limits *must be determined without reference to the interstate business done by the carrier, or to the profits derived from it.* The State cannot justify unreasonably low rates for domestic transportation, considered alone, upon the ground that the carrier is earning large profits on its interstate business, over which, so far as rates are concerned the State has no control. Nor can the carrier justify unreasonably high rates on domestic business upon the ground that it will be able only in that way to meet losses on its interstate business. So far as rates of transportation are concerned domestic business should not be made to bear the losses on interstate business, nor the latter the losses on domestic business. It is only rates for the transportation of persons and property between points within the State that the State can prescribe; and when it undertakes to prescribe rates not to be exceeded by the carrier, it must do so with reference exclusively to what is just and reasonable, as between the carrier and the public, in respect of domestic business. The argument that a railroad line is an entirety; that its income goes into, and its expenses are provided for out of a common fund; and that its capitalization is on its entire line, within and without the State, can have no application where the State is without authority over rates on the entire line, and can only deal with local rates and make such regulations as are necessary to give just compensation on local business."

With these general considerations in mind, the true meaning of the following quotation from that decision becomes plain:

> "We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth."

(5) The original cost of the property, as well as the outstanding capital in stocks and bonds, while admissible in evidence, are matters for consideration only in so far as in the particular case, they are competent evidence of present value.

Smyth v. Ames, 169 U. S. 546;
San Diego Land & Town Co. v. National City, 174 U. S. 739;

San Diego Land & Town Co. v. Jasper, 189 U. S. 442;
Willcox v. Consolidated Gas Co., 212 U. S. 19;
City of Knoxville v. Knoxville Water Co., 212 U. S. 1;
San Diego Land & Town Co. v. National City, 74 Fed. 83;
San Diego Land & Town Co. v. Jasper, 110 Fed. 702;
Matthews v. Board of Commissioners of North Carolina, 106 Fed. 7;
Shepard v. Northern Pacific Ry. Co., 184 Fed. 765;
Consolidated Gas Co. v. City of New York, 157 Fed. 849, 855.

In cases where original cost or outstanding capital have appeared to be in excess of present value, the Courts have declined to determine the validity of rates upon either as a basis of value. This was true in *Smyth v. Ames, supra.*

In *San Diego Land & Town Co. v. National City*, 174 U. S. 739, 757, it was said:

> "The contention of the appellant in the present case is that in ascertaining what are just rates the court should take into consideration the cost of its plant; the cost per annum of operating the plant, including interest paid on money borrowed and reasonably necessary to be used in constructing the same; the annual depreciation of the plant from natural causes resulting from its use; and a fair profit to the company over and above such charges for its services in supplying the water to consumers, either by way of interest on the money it has expended for the public use, or upon some other fair and equitable basis. Undoubtedly, all these matters ought to be taken into consideration, and such weight be given them

when rates are being fixed, as under all the circumstances will be just to the company and to the public. The basis of calculation suggested by the appellant is, however, defective in not requiring the real value of the property and the fair value in themselves of the services rendered to be taken into consideration. What the company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public. The property may have cost more than it ought to have cost, and its outstanding bonds for money borrowed and which went into the plant may be in excess of the real value of the property. So that it cannot be said that the amount of such bonds should in every case control the question of rates, although it may be an element in the inquiry as to what is, all the circumstances considered, just both to the company and to the public."

This ruling was affirmed in *San Diego Land & Town Co. v. Jasper*, 189 U. S. 442.

So in cases where there has been increase in value the same rule has always been applied.

In *Willcox v. Consolidated Gas Co.*, 212 U. S. 19, this was made plain:

> "There must be a fair return upon the reasonable value of the property at the time it is being used for the public. *San Diego Land & Town Company v. National City*, 174 U. S. 739, 757; *same plaintiff v. Jasper*, 189 Id., 439, 442."

And again:

> "And we concur with the Court below in holding that the value of the property is to be determined as of the time when the inquiry is made

regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is at any rate the general rule."

To the same effect:

Wright v. Georgia R. R. & Banking Co., 216 U. S. 420;
San Diego Land & Town Co. v. National City, 74 Fed. 79, 83;
Matthews v. Board of Commissioners of North Carolina, 106 Fed. 9.

These principles applied in these cases:

The cases at bar were decided upon these principles and it will appear from the record that every element referred to in these decisions was brought to the attention of the lower Court and duly considered.

The Court below said (Opinion, Record No. 599, *Simpson et al, v. Shepard* Vol. 1, p. 417):

"Evidence of the cost of reproduction of the Minnesota property of each of the companies, of the original cost of acquisition and construction thereof, and of the average market value of the stocks and bonds of each of the companies for a reasonable period of time prior to June 30, 1908, was introduced before and considered by the Master."

(Master's Report, Record Vol. 1, No. 599, *Simpson et al. v. Shepard*, pp. 217-246.)

In addition, full and complete evidence of earnings and expenses of the companies, both locally in the

State of Minnesota and for the entire systems was produced. The physical properties in the state were examined at much expense of time and money by the Engineer employed by the State. The records and books of the companies were thrown open to exhaustive examination by the State and ample time and opportunity was accorded both sides for presenting all of the evidence within the reach of either party.

After giving due consideration to the evidence showing all of the various elements and considerations affecting present value, the lower Court concluded that the present cost of reproduction "was a more rational and reliable measure of its real value than the original cost of its acquisition and construction or the market values of the stocks and bonds of the companies, and upon that basis he (the Master) made his findings." (N. P. Record, Vol. 1, p. 418).

The assignments of error by appellants assert that cost of reproduction was adopted by the lower Court as the sole measure of value and no other element was considered.

In order to demonstrate that these assignments are unfounded in point of fact, it will be profitable to examine the record in some detail.

Original Cost of Construction.

The Court below said (Vol. 1, No. 599, Northern Pacific p. 418):

> "The Master found the original cost of the acquisition and construction of the entire railroad systems of each of the companies and the proportion thereof assignable on a track mileage basis to Minnesota. The amounts thus found prove to be much less than the values ultimately found by the Master, and for this very good reason: These railroads were pioneers; they were built in large part over the prairies of Minnesota before they were settled and before many of the existing towns, villages, and cities along their lines came into existence. A large part of the right of way of the Northern Pacific Company was granted to it by the nation. The cost of rights of way from 5 to 40 years ago through wild lands, and through towns and villages whose population and the value of the property in which have since been multiplied by from 2 to 10, is obviously no criterion of the value of those rights of way in 1908 when they were used under these fares and rates and when agricultural lands in Minnesota were worth from $35 to $100 an acre, and rights of way and lands for yards and sites for stations in cities like St. Paul and Duluth have wonderfully increased in value. It is a fair return upon the reasonable value of their Minnesota property in 1908 to which these companies were entitled, and the cost of that property at times varying from 5 to 40 years ago may be some evidence; but it is certainly no criterion of its value in that year. In view of these facts the Master rightly decided that the cost of reproducing this property new was a more rational and reliable measure of its real value that the original cost of its acquisition and construction or the market values of the stocks and bonds of the companies, and upon that basis he made his findings."

Northern Pacific Railroad.

The Northern Pacific Railroad Company was chartered by Act of Congress in 1864.

H. A. Gray, Comptroller, testified at length regarding its financial history. He said (Vol. 2, Northern Pacific, p. 260):

> "The old Northern Pacific Railroad Company was chartered by Congress, in the summer of 1864. Owing to difficulties in raising the necessary money, construction was not commenced until the year 1870. At that time arrangements were made, through the firm of Jay Cooke & Company, of Philadelphia, to raise money for construction purposes; and this was done very freely for nearly two years, through the sale of what were known as 7.3 bonds. After about two years the sale of the bonds began to flag, and, when the panic of 1873 came, the firm of Jay Cooke & Co. went down, and the Northern Pacific was in difficulties, which it weathered along until the spring of 1875, when it went into the hands of receivers. It was reorganized in September, 1875, and continued from that time until August, 1893, when it was again placed in the hands of receivers and so continued until September 1, 1896, when it was reorganized, this time not as a continuation of the old Northern Pacific Railroad Company, chartered by Congress, but as under a purchase of the property by a Wisconsin corporation known as the Northern Pacific Railway Company, which has continued ever since."

Complainant's Exhibit 15, Gray (Vol. 10, N. P. case) explained in his testimony (Vol. 2 N. P. case, p. 269) was as full and complete an exhibit of the actual cost to the Company to April 30, 1908, of its operating property as in the great lapse of time could be made.

It showed:

Total cost to Aug. 31, 1896 (close of second receivership)	$241,067,769.91
Cost of new construction, equipment, improvements and betterments, Sept. 1, 1896, to April 30, 1908	128,184,985.82
Grand total	$369,252,755.73

The exhibit shows the cost to the Company under decree of foreclosure September 29, 1875, in gross, no sufficient records being in existence now to determine the details of this item. (Gray p. 264, Vol. 2, N. P. case.) Since that date the cost of construction and equipment is shown in great detail. Exhibit 16 Gray (Vol. 10, N. P. case) also shows in detail the sources from which funds were obtained for additions to the property from Sept. 1, 1896, to April 30, 1908, amounting to $128,184,985.82.

Appellants investigated at great length the cost of the property and the details of the two failures and reorganizations so far as records and human memory could supply them.

Note.

Appellants, in their brief (p. 119), direct attention to Exhibit 15, Gray, and the Item of $91,150,127.54 for "Purchase of Constructed Road."

A misleading deduction is drawn regarding this item by referring to portions only of testimony relating to the purchase by the Northern Pacific, in 1900, of the St. Paul & Duluth Railroad Company, and it is asserted that the record shows that the Northern

Pacific issued bonds to pay for property of the St. Paul & Duluth Company, part of which was operating railroad property and the remainder consisted of a valuable land grant.

The fact clearly shown by the record is, however, that the bonds issued by the Northern Pacific were solely for the purpose of paying for the operating property of the St. Paul & Duluth Company and the land grant owned by the St. Paul & Duluth was purchased by the Northwestern Improvement Company by the issuance of its own securities, no part of which came from nor in any way was provided by the treasury of the Northern Pacific Railway Company. This will appear from the following references to the record, and in passing it will be noticed that Appellants in the lower court called upon Mr. Gray for Defendant's Exhibit "AA" Gray (Vol. 9, N. P.), which is a detailed statement of all of the purchases involved in the item of $91,150,127.54 referred to above and contained in Defendant's Exhibit 15 Gray. Defendant's examination of Mr. Gray on this subject begins on page 685, Volume 3, N. P., and extends at great length thereafter, so that it is plain that the defendants had the fullest opportunity of investigating everything involved in this item.

Mr. Gray testified (3 N. P., p. 664) that when the Northern Pacific purchased the St. Paul & Duluth property it assumed certain mortgages thereon, and that the assumption of those bonds had no connection whatever with the land grant of the St. Paul & Duluth Road which was deeded to the Northwestern Improvement Company, and that those lands were not pledged for the payment of those bonds.

Mr. Gray testified (3 N. P., p. 716) that the St. Paul & Duluth bonds issued by the Northern Pacific (see Complainant's Exhibit 14, Gray) were issued to provide funds to pay for the stock of the St. Paul & Duluth Railroad. In Mr. Gray's testimony, in volume 2, N. P., p. 359, it clearly appears that the Northern Pacific Railway bonds (called St. Paul & Duluth Division Bonds in Exhibit 14, Gray) were issued to purchase the railroad of the St. Paul & Duluth and that the latter used the money thus obtained to retire all of its common capital stock and script outstanding. The land grant of the St. Paul & Duluth was purchased by the Northwestern Improvement Company at $4,020,927.39, which money was used by the St. Paul & Duluth to retire its outstanding preferred stock and certain scrip. This explanation is perfectly plain and the quotation on page 120 of Appellant's brief from Mr. Gray's testimony (2 N. P., p. 362) is so scant as not to convey the full statement made by the witness.

Further evidence regarding this subject is found in the Financial History of the Northern Pacific Railroad Company offered by Mr. Gray (3 N. P., p. 928), and the final explanation of the subject was made by Mr. Howard Elliott, President of the Northern Pacific Railway Company, and also President of the Northwestern Improvement Company, in Vol. 8, N. P. p. 3560, which is contained in a statement filed by him entitled "A Brief History of the Origin and Development of the Northwestern Improvement Company." This statement explicitly shows that the land grant of the St. Paul & Duluth was purchased by the Improvement Company by the deposit of $4,000,000.00

of its, the Improvement Company's, bonds with the Trustee of the St. Paul & Duluth Division Mortgages, which were redeemed and cancelled from time to time by payments derived from the net proceeds of the sale of these lands, some of which at the time Mr. Elliott testified were still unredeemed. As this is the only example cited by Appellants in their brief justifying criticism upon the item of $91,150,127.54, and as an examination of the records shows that this example has not been accurately stated, further reference to the subject need not be made other than to again direct attention to the fact, as above shown, that all of the sums involved in this item covering "Purchase of Constructed Road" were fully and patiently examined by Mr. Gray in connection with counsel on both sides, in order to make full and complete showing regarding it.

Defendant's Exhibit V, Gray (Vol. 9, N. P case) is a yearly statement compiled by defendant's accountant from Reports of the Company to Stockholders and Commissions, of the cost of the property from 1876 to 1908.

Defendant's Exhibit W, Gray, is a comprehensive history of the organization and reorganization of the property. It contains copies of public acts, charters, reports and accounts of the various officers, syndicates and reorganization managers.

Defendant's Exhibits, Gray, Y, Z, AA, BB, CC, and EE (Vol. 9, N. P. case) all bear in detail upon the total cost of the property to the Company and the witness Gray testified at great length in explanation of these exhibits so fas as his records or knowledge

went. His oral evidence is found in the following volumes in the Northern Pacific case:

Vol. 2, pp. 259— 416.
Vol. 3, pp. 592— 718.
Vol. 3, pp. 905— 936.
Vol. 4, pp. 1162—1216.

In its final analysis, the question of the total cost of the Northern Pacific property was exhibited in Complainant's Exhibit 28, Gray (Vol. 10, N. P. case).

Complainant's Exhibit 15, Gray, showed the total cost of the property to have been.....	$369,252,755.73
Defendant's Exhibit V, Gray, stated the cost at.....	273,747,024.25
Difference—	
Construction $90,480,950.39	
Equipment 5,024,781.09	
Total difference.....	$95,505,731.48

These differences were fully explained in Gray's testimony (Vol. 3, N. P. case, p. 932, and Vol. 4, pp. 1173 et seq.).

Note.

Appellants in their brief, (p. 121) comment upon the difference in totals between Complainant's Exhibit 15, Gray, and Defendant's Exhibit "V," Gray, showing the cost of the Northern Pacific property, but they omit any reference to Complainant's Exhibit 28, Gray, which was prepared by Mr. Gray for the purpose of analyzing and showing the difference between the other two exhibits, and offered in evidence in Vol. 3

N. P., p. 932. They also omit reference to his testimony explaining this exhibit, some of which appears immediately following the offer of it in evidence and the remainder in his testimony in Vol. 4 N. P., p. 1162 and following. At p. 1174 the reason for the differences between Complainant's Exhibit 15, Gray, may be illustrated by the explanation there given by the witness, showing that Appellants in preparing their Exhibit "V" made wholesale omissions of many items which are properly chargeable to cost of property.

The Master in the light of all of the evidence thus adduced fixed the original cost at $312,243,555. and apportioned 21% thereof upon the track mileage basis to Minnesota or $65,571,462. (Vol. 1, N. P. case, p. 240).

Great Northern Railroad.

This system had its origin in 1857. The St. Paul & Pacific Railroad Company was then organized and for ten years it is probable that little actual construction was completed. It appears that by 1872 there were about 218 miles of completed road in operation and 104 miles in a partial state of construction, or a total of 322 miles. Other figures indicate 283 miles completed, 104 miles under construction or a total of 287 miles. The company went into hands of a receiver in 1873 and remained in that condition until 1879. During the receivership, additional mileage was built and completed out of funds advanced by owners of various interests and at the foreclosure in 1879, 656 miles of road and equipment were sold and taken over by the St. Paul, Minneapolis & Manitoba Railway Company at a cost to it on its books of $30,811,-028.33.

No books or records of the St. Paul & Pacific Company or the receiver appeared to be in existence (Hillman, G. N. case, Vol. 4, p 1885) and therefore the extended examination by the State's accountant Hillman into the cost of these properties was as to the period prior to 1879, grounded largely upon surmise and hearsay. This was necessarily so in view of the lapse of time and the loss of the early records. The Great Northern Railway Company in 1890 leased and undertook the operation of the greater part of the system as it then existed. (4 G. N. Record p. 2021.) In 1907, substantially all of the existing mileage was conveyed to it by deed. (4 G. N. Record p. 2007.)

The balance sheet of the Great Northern (Complainant's Ex. 54, Parker p. 34, G. N. case, Vol. 6)

shows the cost of the railway property as accrued year by year in the corporate records. Hillman, the defendant's accountant was given full access to all available books and records (G. N. Rec. Vol. 4, p. 1764, et seq.) and compiled voluminous exhibits showing the cost of the system in nine periods. (Defendant's Ex. K-1 to K-9 incl. Vol. 5 G. N. case.) His testimony in explanation of his deductions is at great length. (Vol. 4, G. N. pp. 1764-1910, 2005-2006.) He determined an approximate book cost with certain additional deductions suggested as shown in Exhibit K-7, Hillman (G. N. Vol. 5).

J. G. Drew, Comptroller of the Great Northern Railway Company was also examined at length upon the same subject. (G. N. Vol. 4, pp. 1910-2004.) He explained many of the items disputed by Hillman. In the light of this evidence the Master found the cost (Vol. 1, G. N. p. 242), and assigned 32.59% thereof to Minnesota upon the track mileage basis.

The various computations were as follows:

(p. 34, Ex. 54, Parker, Vol. 6, G. N.)—Cost by Great Northern records	$319,681,815.34
(Ex. K-7, Hillman, Vol. 5, G. N.)—Cost asserted by State Accountant (with other possible deductions)	291,414,415.34
Difference	$28,267,400.00
(Vol. 1, G. N., p. 198)—Cost as determined by Master	$295,401,213.00
(Vol. 1, G. N., p. 198)—Mileage proportion assigned to Minnesota	$96,271,255.00

Minneapolis & St. Louis Railroad Company.

This system also had its origin in 1857. It was enlarged from time to time by consolidation of smaller lines and construction of extensions and in 1888 passed into the hands of receivers. In 1894 it was reorganized and the present company undertook the operation of the property.

L. G. Scott, Auditor, testified in some detail regarding its history and cost. (M. & St. L., Vol. 2, pp. 1, 43 et seq., Vol. 3, pp. 607 et seq.). He produced Complainant's Exhibits 7 and 7-A (M. & St. L., Vol. 6) showing in detail the cost of property to April 30, 1908, and explained the exhibits in his testimony.

Defendant's Exhibits F and G, Scott (M. & St. L., Rec. Vol. 5), the one being an agreement of stockholders in 1894 and the other an agreement for consolidation of certain lines into a single system have a direct bearing upon the history and growth of the present system. They are fully explained in the cross-examination of the witness Scott. (Vol. 3, M & St. L. Rec., pp. 636, et seq.).

Considering this evidence, the Master found the true book cost of the entire system at $28,574,225. He assigned 59.94% to Minnesota upon a mileage basis, or $17,127,390. (Vol. 1, M. & St. L., pp. 177-8.)

These considerations make it plain (1) that all evidence within the reach of either party in each of the three cases was produced and (2) that it was duly considered both by Master and Court below. Considering the long period of time over which construction in each case had extended and the ample evidence

and judicial knowledge of changed conditions, it becomes equally plain that the original cost of these properties, as it had accrued yearly over more than a half century, was entitled to little weight in determining present value.

The Master rightly so concluded. He said (N. P. Rec., Vol. 1, p. 218):

> "The roads under consideration were constructed and completed many years ago and what may have gone into them, if it could be determined with reasonable certainty, would not take into consideration the changed condition of the country since their original construction, its growth and prosperity—in which the companies are entitled to share—and by reason of changed conditions and lapse of time it has little weight in arriving at present values. As stated by Judge Hook in the recent case of *Missouri, Kansas & Texas Railway Company v. Love et al.*, in this circuit (177 Fed. 493):
>
> 'There is another matter to be regarded, not specifically mentioned in the above excerpt from the opinion of Mr. Justice Harlan. An established railroad system may be worth more than its original cost and more than the mere cost of its physical reproduction. It has passed the initial period of little or no return to its owners which, of greater or less duration, almost always follows construction and is not infrequently marked by default and bankruptcy. The inevitable errors in its building which finite minds and hands cannot avoid have been measurably corrected, time and effort have produced a commercial adjustment between it and the country it was intended to serve, relations have been established with patrons, and sources of traffic have been opened up and made tributary. In other words, the railroad unlike one newly con-

> structed, is fully equipped and is doing business as a going concern. It has attained a position after many experiences common to railroad enterprises which entail loss and cost not paid from current earnings and which correspondingly make for value.'"

The excerpt from the decision of the Court below heretofore quoted, fully indicates that fair consideration of the weight of the evidence upon this branch of the subject was given in confirming the view of the Master.

> (Note.—It will appear in the consideration hereafter of the basis upon which present Cost of Reproduction was determined, that actual cost prices of every substantial item of physical property, land and structures, within reasonable periods in the past, were shown from actual records made in the current course of business. Books, records and vouchers of the railway companies were searched by both parties without restriction to determine and prove the actual prices paid.)

In one aspect of the matter, however, these original cost figures are entitled to weight. While the lower Court rightly declined to give them controlling weight, either as matter of law in limiting present value to actual cost, or as matter of fact in reducing actual present value to a basis that would be obsolete in point of time, it is plain that the very large expenditures made during the half century of growth are proof that very heavy investments have been made in creating these systems. If, therefore, these investments appear under the evidence, to have been wisely made and fostered and to have contributed their fair share towards the tremendous growth of the territory served, a finding of sub-

stantially higher values at present than the amount of original cash investment is amply fortified by a reference to these cost figures.

Amount and Market Value of Stocks and Bonds.

Error is further assigned (1) in that the Court below failed to consider the outstanding capital and market value thereof, and (2) because complainants failed to furnish proof of the face or market value of stocks and bonds that represent the property used in the service of transportation as distinguished from other property owned by the companies.

Northern Pacific Case.

The Master reported (N. P. Case, Vol. 1, p. 239) that "reliable evidence" was produced before him on this subject and his findings discuss it.

Complainants' Exhibit 14, Gray (Vol. 10, N. P. Case), states in detail the par value of the outstanding stock and bonds on April 30, 1908. The sum of each is as follows:

Par Value:	
Stock and subscription receipts	$215,539,634.99
Bonds	190,256,757.66
Total	$405,796,392.65

Complainant's Exhibit 17, Gray (Vol. 10, N. P. Case), is a statement of average market value of stock and bonds for a period of five years ending April 30, 1908. Gray testified (Vol. 2, N. P. Case, p. 271) that it was accurately compiled from the daily market quo-

tations shown in authentic publications. The sum total of each is as follows:

Market Value:	
Stock	$330,500,320.00
Bonds	179,324,403.12
Total	$509,824,723.12

Apportioned to the State of Minnesota upon mileage gives $107,063,191 as the proportionate part of the value based upon market quotations. (1 N. P., 239.)

The value of the property in Minnesota used in the transportation service as finally adopted by the lower court was but $90,204,545 or $16,858,646 *less* than the amount shown by the stock and bond method. (Master's Report, 1 N. P., 235-6.)

If it had been plain that all the property owned by the Northern Pacific Railway Company was devoted to the transportation service, the Court would have been justified and doubtless required to fix the fair value at something higher than $90,204,545. It did appear, however, that there were certain properties not used in transportation service but of inconsiderable value in relation to the whole. The chief item of such outside properties was the stock and bonds of the Northwestern Improvement Company, a business corporation, owned by the Northern Pacific Railway Company.

The complainants showed the face value and book value of the securities of that company but did not and were not able to furnish competent evidence of the real value of its assets.

Under all the circumstances the Master declined to *increase* the physical inventory value of the operating property by any additional amount reflected by market quotations.

Appellants now urge error in that there was a failure by complainants "to furnish any proof of the face or market value of the stocks and bonds which represent the part of the total investment devoted to the public service, separate from the other profit producing property owned by the Company and acquired by the same capitalization." (Assignments of Error, Sec. II.-IX., N. P. Rec., Vol. 1, p. 446.)

No exception was filed in the Court below asserting an error in this regard and it is raised in this Court for the first time. It is plain, however, that no error exists.

Defendant's Exhibit CC. Gray (Vol. 9, N. P. Case), is a Condensed Balance Sheet of the Northern Pacific Railway Company from its General Books as of April 30, 1908.

It shows two items which are all that need be referred to in this connection:

(1) Credit to Profit and Loss, $52,900,073.30.

Howard Elliott, President of the Railway Company, testified in detail (N. P. Rec., Vol. 4, pp. 1279 et seq.) regarding the so-called surplus and showed that it was the accumulation of surplus income since Sept. 1, 1896, that had been re-invested in improvements in the property and necessary working capital, reserve funds to provide for depreciation and an insurance fund against losses by fire.

It is a surplus invested in the operating property and in so far as it strengthened the market prices of stocks

and bonds of the company, should not be deducted from the value thus shown. It is not value nor property in any way separate from the operating property; on the contrary it is an integral part of it.

(2) Northwestern Improvement Company.

This company was organized in 1900 and its capital is all owned by the Northern Pacific Railway Company. It is as follows:

Stock	$2,775,000
Bonds	7,000,000
Total capital	$9,775,000

A complete history of its origin is found in testimony of Howard Elliott, President of both companies (N. P. Case, Vol. 8, pp. 3556, et seq.) A list of its assets on May 4, 1909, follows this statement. Defendant's Exhibit "NN," Elliott (Vol. 9, N. P. Case), is a copy of its balance sheet on April 30, 1908.

The chief assets of this Company are lands known in part and believed to a considerable extent to contain coal and iron ore. Considerable explorations in the Cascade and Rocky Mountains and in Minnesota have been made by diamond drills, etc., to ascertain existence of coal or ore, but it appeared that it would require some years to make such an investigation as would justify the attempt to state a value.

It seemed therefore to be a case where any proof of value other than cost was beyond the reach of the complainant except at the expenditure of much time and money and when obtained would be highly speculative and uncertain.

The following from Elliott's testimony makes this plain (N. P. Case, Vol. 8, p. 3571):

> "I want to make a general statement there, Mr. O'Brien, as to values. Now, it is practically impossible, in my judgment, in any reasonable time, to determine, for example, the value of any of our coal properties. We have a very large amount of land that is thought to have coal underneath it. The land in Washington is in the mountains. It is covered very heavily by the detritus of centuries, and the diamond drilling there is excessively slow; we have been running a diamond drill in that country ever since I have been with the Company (that is five years), and we have obtained very little accurate information by the work. We have certain mines that are in operation and today they are producing large quantities of coal and in that way they are of great value to the Railway Company by enabling it to have a supply of coal to run its business. How long that supply will last, I can't say, I don't know anyone that can. At one time, for my own purposes, I thought of making up the information, exactly such as you asked for, and I found it was practically impossible unless we spent a good many years doing it and when we got through we were doubtful whether the information would be right or not. Some of these coal properties are in the Cascade mountains, which, as you know, is a volcanic range; one in particular, that is carried on these books at $272,000, it is a question whether it is worth a cent; we hope it is, but it is in a very bad situation. We have got a little coal in sight today and are getting out two or three hundred tons a day—it may disappear any minute. Another one of these coal properties, at Chestnut, Montana, stands on our books at $553,000—we are getting ready this year to wipe the whole score off to profit and loss and abandon the mine. The coal is there

but it is very much broken and we don't know how long it would last if we go on mining; we have been drifting a rock channel for two years in the hope of finding some coal and having a working mine. The local men are, of course, enthusiastic, they think they will find coal; but the Amalgamated Copper Company had mine after mine in that same district, have sunk several million dollars and have abandoned the mines. Now, you take our Red Lodge mine which today is a source of considerable income to the Company, producing coal that we use in Montana—since I have been here we have had three fires in that mine, which we fortunately controlled, but they might have gutted the entire mines. The Ravensdale mine, in Washington, we *think* there is a large amount of coal there, but we are today in what is called a 'want;' that is to say, we have been mining along and suddenly come to a place in the mine where at some time in the dim past the action of the water or some cause washed all the coal away, and there we are with a fine set of top works and a fine development and we suddenly come to a place in the mine where there is what the geologists call a want—it is not a fault, it is a want."

In view of these conditions it would be furthermore speculative and uncertain in the last degree to attempt to fix a value upon so-called outside properties of this character and after deducting it from the total amount of value shown by the market quotations, assert that the remainder represents the fair value of the operating property. The Master rightly declined to attempt it.

The weight to be given to evidence of value upon any single basis depends upon the circumstances in the particular case.

The existence of outside property of considerable apparent value in the case of the Northern Pacific and the absence (1) of reliable evidence of the value of such property and (2) of any reliable method of determining how much of that value was embraced within the range of market quotations or should be deducted from the total value of the securities, necessarily indicated that in this case it would not be just to determine value of the operating property upon this basis.

The value of the system upon this basis was found to be (N. P., Vol. 1, p. 239)	$509,824,723.
Upon the basis of Cost of Reproduction it was found to be (N. P., Vol. 1, p. 246	452,666,489.
Difference	$57,158,234.

In Minnesota, as above stated, the difference was $16,858,646.

It will appear from the record that these differences between the values reflected by security values and those adopted by the Court below upon the lower basis of present cost of construction, will amply cover the total value of all such outside property.

Finally, as a practical question it is plain that the value of the property used in the State of Minnesota for the intrastate freight and passenger business is *relatively* a small part of the total property of the system in all states. Property such as that of the Northwestern Improvement Company is appurtenant to the whole system and not to a single state and in a stock and bond valuation this is necessarily true be-

cause that is a valuation of the whole system. Therefore, when the transportation property is so palpably the much greater part of the two, the non-operating property when deducted by any recognized method, in its proper proportion, from the local intrastate freight and passenger value is in these cases negligible in its effect. It will be seen hereafter that upon any basis suggested by the record that part of the value of such outside properties that may be assigned to Minnesota would not substantially reduce the *already lower basis* adopted by the Master, and when again apportioned to the classes of business within the state, the percentages of return under the rates complained of are only slightly affected.

Great Northern Case.

Exhibit 54, Parker (Vol. 6, G. N. p. 34), shows the par value of the Great Northern stock and bonds on June 30, 1908, as follows:

Par Value:	
Stock	$209,962,750.00
Bonds (in hands of public)	97,955,939.39
Total	$307,918,689.39
Market Value:	
Exhibit 67, Drew (Vol. 4, G. N., p. 2094), states the average market value of stocks and bonds for a period of five years ended June 30, 1908, at.	$452,363,804.86
(Master's Rep., Vol. 1, G. N., 196)—Assigning a mileage proportion to Minnesota of 32.59 per cent equals	$147,425,363.00

(Master's Rep., Vol. 1, G. N., 193)—The Master fixed the value in Minnesota upon the basis of cost of reproduction at	138,425,291.00
Difference	$9,000,072.00

In this instance also, it appears that the lower Court refused to increase the value in the state because of a greater value reflected by the prices paid by the public for the Great Northern securities.

There was no evidence of any considerable property owned by the Great Northern outside of that used in operation and the assets shown in the Condensed Balance Sheet for June 30, 1908 (Vol. 6, G. N. Ex. 54, Parker, p. 34) are substantially all directly appurtenant to the transportation property. The profit and loss credit has been substantially reinvested in the property in one form or another.

It is plain, however, that upon any view of the assets of the company, any deductions that might be suggested as not appurtenant to the transportation property, would not materially alter the final results and this is true for the reasons heretofore given in considering the Northern Pacific case.

Minneapolis & St. Louis Case.

Exhibits 6 and 7, Scott (M. & St. L., Vol. 6), show the par value of stocks and bonds in 1908 as follows:

Par Value:	
Stock	$10,000,000.00
Bonds	20,011,800.00
Total	$30,011,800.00

Market Value:

Exhibit 7, Scott (supra), states the market value in 1908 of each as follows:

Stock	$17,946,197.00
Bonds	4,060,000.00
Total	$22,006,197.00

(Master's Rep., Vol. 1, M. & St. L., p. 175)—Assigning 60% to Minnesota on the basis of the mileage in the state gives..... $13,203,718.00

(Master's Rep., Vol. 1, M. & St. L., p. 173)—The Master in his report and State Engineer Morgan, in his Estimate "A" (Exhibit "K," Morgan in M. & St. L., Vol. 5), found the Present Value of this line in Minnesota at $21,608,464.00

It is apparent that in the case of this road the apportionment of stock and bond value to the State of Minnesota upon a mileage basis, even if otherwise reliable, would work a result that would be unjust and for this reason:

The Master in his report (sub title "Roads Constructed and Maintained Pursuant to Public Demand," Vol. 1, M. & St. L., 179), discussed the marked difference in the location and surrounding conditions of the three roads under consideration and as to the Minneapolis & St. Louis noted that it must depend largely on local traffic for its business.

Complainant's Ex. 2, Scott (Vol. 6, M. & St. L.), is a map of the system. It is plain from it that the larger and more important terminals of the system are in Minnesota and therefore the greater value is there.

The Master found the value of the lands for right of way and terminals in the State at $5,999,397.00.

Whereas, 60% of its mileage is in the State of Minnesota, 77.41% of its gross revenue is earned therein. (Complainant's Ex. 8, Scott, Vol. 6, M. & St. L.)

In cases involving an apportionment of values between states for purposes of taxation it has been uniformly held that terminals in one state of enormous value usually present an exception to the ordinary rule, that permits for such purposes, a mileage proportion of an entire line to be assigned to the state. Thus in *Pittsburgh, etc., Railway Co. v. Backus*, 154 U. S. 421, 431, it was held:

> "It is true, there may be exceptional cases, and the testimony offered on the trial of this case in the Circuit Court tends to show that this plaintiff's road is one of such exceptional cases, as for instance, where the terminal facilities in some large city are of enormous value, and so give to a mile or two in such city a value out of all proportion to any similar distance elsewhere along the line of the road, or where in certain localities the company is engaged in a particular kind of business requiring for sole use in such localities an extra amount of rolling stock. If testimony to this effect was presented by the company to the state board, it must be assumed, in the absence of anything to the contrary, that such board, in making the assessment of track and rolling stock within the State, took into account the peculiar and large value of such facilities and such extra rolling stock. But whether in any particular case such matters are taken into consideration by the assessing board does not make against the validity of the law, because it does not require that the

valuation of the property within the State shall be absolutely determined upon a mileage basis."

Applying this doctrine to this case, it would apparently be inequitable to assign to the mileage outside the state of Minnesota, largely branch line in character, a mileage proportion of the valuable Minneapolis terminals or the more valuable main line in Minnesota because as seen above, 77.41% of the company's entire revenues are earned within the State of Minnesota.

(Note.—By the cost of reproduction as found by the lower Court, all the operating property in Minnesota of each of these companies, including terminal properties of each of great value, was appraised. The total value, however, of the property of each company was then apportioned and divided between the different kinds of business conducted, in proportion to the revenue from each class of business. In this way, the *proportionate partof the value* of the operated property in the state has been justly assigned to the intrastate freight and passenger business of each company and those parts of the total value only used as the basis for computing the net revenues under the rates complained of.)

Furthermore, the market prices of the securities of the Minneapolis & St. Louis Railroad Company in 1908 were much depressed.

Exhibit 7, Scott (Vol. 6, M. & St. L.), shows that in 1906 prior to the panic in 1907 and depressed prices following through 1908 therefor, the values of stocks and bonds were much higher, thus:

1906—	
Stock	$8,152,500.00
Bonds	20,220,587.00
Total	$28,373,087.00
Value in 1908	22,006,197.00
Difference	$6,366,890.00

In light of this sharp depression in a period of contracted values all over the country, it is hardly to be assumed that the low market value in 1908 should have been seriously regarded by the lower Court.

Upon this general subject the Master said (Vol. 1, N. P. p. 240):

> "Stock valuations are subject to great fluctuation from causes wholly foreign to the intrinsic values of properties to be taken as a basis of rate making and have little commercial stability, It is impossible to determine with any degree of certainty the particular elements which from time to time cause such fluctuations and determine the market value of such stocks and to separate the same from the value of properties devoted to public use and decide what proportions thereof shall be assigned to each. Prof. Henry C. Adams, statistician of the Interstate Commerce Commission, has this to say in respect to stock valuations:
>
> 'This is no place to enter upon a discussion of the nature and classification of different kinds of value, but a word of caution may be allowed in order to guard against an unwarranted use of the figures here submitted. The commercial valuation of railroad property, in so far as it depends on income arising from the sale of transportation, is the result, among other things, of an established schedule of freight and passenger rates, from which it follows that such a valuation cannot be used for determining the reason-

ableness or unreasonableness of the rates in question. The solution of the rate problem demands a separate valuation of the physical property.'

Valuation of properties for purpose of taxation would include all the properties of the corporation whether devoted to the public service or not, and in such cases the market value of stocks and bonds issued by it would be an important element of value."

These observations correctly state the infirmity in the stock and bond method of fixing value in a case involving constitutional right to a fair return. In matters of taxation this court has several times held that while the assessing body is not bound to determine the value in their particular territory upon a mileage basis, it is permissible and ordinarily sound in principle so to do, but reflection proves that in cases involving the justness of rates, it is reasoning in a vicious circle to assert that value may be based upon earnings, because the right to earnings depends in very great measure upon the fair value of the property devoted to the public service.

Value based on prices of stock and bonds is one form of "commercial" valuation and established income is an important factor in determining market price of securities. In like manner, commercial value of securities depends in a large measure upon a fixed and certain public opinion and a settled state of the law relating to rights and responsibilities of carriers.

Therefore, when large reductions of important rates are being sought in the very litigation in which value is to be shown, the effect of prospective reductions in income naturally reflects itself in lower market prices.

In like manner, unsettled public opinion and un-

settled state of the law, state and federal, drives money out of the markets and renders railroad securities less desirable to investors; this means lower prices and, to the extent that such abnormal conditions exist, renders valuation based upon market value of securities less reliable than cost of reproduction.

Appellants in their brief (p. 133 et seq.) urge upon this court the adoption of the doctrine that the amount of outstanding capital is the maximum basis of value that can be allowed in cases of this character. It is sufficient to recall as hereinbefore noted, that this question was one fully debated and determined by this court in *Smyth against Ames* (supra), since which decision it has been supposed that instead of outstanding capital being a conclusive measure of value, it can only be considered as one of the different elements for examination in determining the ultimate question of fair present value.

It is worth while, however, to note the following expressions from the Report of the Railroad Securities Commission to the President of the United States, published December 8, 1911:

> "In the case of *Smyth v. Ames* the Supreme Court of the United States held that the amount of bonds and stocks outstanding was but one among many matters to be considered in deciding whether rates were reasonable. This therefore is the law as determined by precedent; and it is fortunate that the dictates of precedent coincide with those of business sense. The attempt to make the face value of securities issued the determining factor in rates would result in putting a premium on roads which had been speculatively, not to say dishonestly, built or managed, by allowing them to charge higher rates on ac-

count of the inflated capital thus produced. And, wholly apart from any such speculation or dishonesty, the amount of stock capital and bonded debt, even if paid for at par, is a very inaccurate and incomplete criterion of the value of the property devoted by its owners to public use. It has at best only a historical importance, as showing what property was or purported to be worth at the time of the incorporation. It does not show what it is worth, or what rates may properly be charged for its use, ten years later or even one year later."

Cost of Reproduction.

The value of the property used for the public convenience consists in the main of two kinds:

(1) Tangible or physical property.

(2) Intangible property.

The former consists of its lands, road-bed, track, buildings and other structures, equipment, tools, stores on hand, and everything of a tangible character capable of inventory and direct appraisement.

The latter consists of so-called immaterial elements of which only the following need now be specified:

(1) Value which is reflected by added earning power derived from the connected operation of the whole property, and the possession of an efficient organization, a past record of prompt and efficient operation, giving the property and its organization a standing in the commercial communities it serves.

(2) The possession and control of non-competitive traffic.

(3) The possession of established traffic connections producing a continuous flow of competitive traffic.

(4) Value derived from the organization and vitality of industries which it serves.

Rule.

It may be stated as a rule in every case where the property has been efficiently located, constructed and maintained and results of operation as a whole show volume of traffic and earnings sufficient to support the property, pay reasonable dividends and leave something in addition, the true value is in excess of the mere cost of reproduction of the physical or tangible property.

Smyth v. Ames, 169 U. S. 546;
Mayor, etc., of Knoxville v. Knoxville Water Co., 212 U. S. 1;
Willcox v. Consolidated Gas Co., 212 U. S. 19;
A. T. & S. F. Ry. Co. v. Sullivan, 173 Fed. 456, 464;
Consolidated Gas Co. v. City of New York, 157 Fed. 849, 855;
M. K. & T. Ry. Co., et al., v J. E. Love, 177 Fed. 493;
National Waterworks Co. v. Kansas City, 62 Fed. 853, 864;
Southern Pacific Co. v. Bartine, 170 Fed. 725, 751;
Metropolitan Trust Co. v. Houston & Texas Central Ry. Co., 90 Fed. 683, 688;
Springvalley Waterworks v. City of San Francisco, 124 Fed. 574, 594;
Kennebec Water District v. City of Waterville, 97 Maine, 185, 60 L. R. A. 856;
Water District v. Water Company, 99 Maine 371;
Re Proposed Advance in Freight Rates, 9 I. C. C. 402;
Ames v. Railroad, 64 Fed. 165;
Cotting v. Kansas City Stock Yards Co., 82 Fed. 850, 854;

Cotting v. Kansas City Stock Yards Co., 183 U. S. 79, 91.

The Courts have thus recognized that cost of reproduction of the tangible property is an element of prime importance in determining present value.

In a case involving the validity of rates prescribed by public authority, it may be debatable whether all of the foregoing elements making for intangible value should be considered. It has not appeared necessary in these cases to consider such questions. While it has been suggested that there may be a difference in value for taxing purposes and that in rate cases or in cases involving contracts of sale (*Omaha v. Omaha Water Co.*, 218 U. S. 180, 203), it would appear to be plain that where mere cost of reproduction of the physical operating property has been adopted as the basis for valuing properties that are favorably located and efficiently managed, it produces a result lower than any other recognized basis. This is chiefly for the reason that it does not reflect any of the intangible values that are recognized to exist in such properties.

In the present cases, as stated, it has not seemed necessary to enter upon a consideration of full value or the questions that may arise in the various classes of cases in which different values may be recognized. To the extent that depreciation in certain items existed, the claim was made and sustained by overwhelming proof that that particular added element of value arising from the efficient adjustment and adaptation of the various parts of the transportation machine into a matured and effective agency added value more than sufficient to absorb and overcome such

minor depreciation. (See infra sub title Depreciation and Appreciation in Value.)

A comprehensive review of the reasons and judicial authority supporting this basis of valuation in cases involving the constitutional validity of legislative rates is found in *Consolidated Gas Co. v. City of New York*, 157 Fed. 849, 854.

It was said:

> "As to the realty, the values assigned are those of the time of inquiry; not cost when the land was acquired for the purposes of manufacture, and not the cost to the complainant of so much as it acquired when organized in 1884, as a consolidation of several other gas manufacturing corporations.
>
> It is objected that such method of appraisement seeks to confer upon complainant the legal right of earning a fair return upon land values which represent no original investment by it, does not indicate land especially appropriate for the manufacture of gas, and increases apparent assets without increasing earning power. Analogous questions arise as to plant, mains, services, and meters; the reported values whereof are the reproductive cost less depreciation, and not original cost to the complainant or its predecessors.
>
> It appears by undisputed evidence that some of these last items of property cost more than new articles of the same kind would have cost at the time of inquiry; that some are of designs not now favored by the scientific and manufacturing world, so that no one now entering upon a similar business would consider it wise to erect such machines or obtain such apparatus. In every instance, however, the value assigned in the report is what it would cost presently to reproduce

each item of property, in its present condition, and capable of giving service neither better nor worse than it now does. As to all the items enumerated, therefore, from real estate to meters, inclusive, the complainant demands a fair return upon the reproductive value thereof, which is the same thing as the present value properly considered. To vary the statement: Complainant's arrangements for manufacturing and distributing gas are reported to be worth the amounts above tabulated if disposed of (in commercial parlance) 'as they are.'

Upon authority, I consider this method of valuation correct. What the court should ascertain is the 'fair value of the property being used' (*Smyth v. Ames*, 169 U. S., at page 546, 18 Sup. Ct., at page 434, [42 L. Ed. 819]); the 'present' as compared with 'original' cost; what complainant 'employs for the public convenience' (169 U. S., at page 547, 18 Sup. Ct., at page 434, [42 L. Ed. 819]); and it is also the 'value of the property at the time it is being used' (*San Diego Land Co. v. National City*, 174 U. S., at page 757, 19 Sup. Ct., at page 811, [43 L. Ed. 1154]). And see also *Stanislaus Co. v. San Joaquin Co.*, 192 U. S. 201, 24 Sup. Ct. 241, 48 L. Ed. 406. It is impossible to observe this continued use of the present tense in these decisions of the highest court without feeling that the actual or reproductive value at the time of inquiry is the first and most important figure to be ascertained, and these views are amplified by *San Diego Land Co. v. Jaspar* (C. C.) 110 Fed., at page 714, and *Cotting v. Kansas City Stock Yards* (C. C.) 82 Fed., at page 854, where the subject is more fully discussed. Upon reason, it seems clear that in solving this equation the plus and minus quantities should be equally considered, and appreciation and depreciation treated alike. Nor can I conceive of a case to which this procedure is more appropriate than the one at bar. The complainant by itself

and some of its constituent companies has been continuously engaged in the gas business since 1823. A part of the land in question has been employed in that business for more than two generations, during which time the value of land upon Manhattan Island has increased even more rapidly than its population. So likewise the construction expense not only of buildings, but of pipe systems under streets now consisting of continuous sheets of asphalt over granite, has enormously advanced.

The value of the investment of any manufacturer in plant, factory, or goods, or all three, is what his possessions would sell for upon a fair transfer from a willing vendor to a willing buyer, and it can make no difference that such value is affected by the efforts of himself or others, by whim or fashion, or (what is really the same thing) by the advance of land values in the opinion of the buying public. It is equally immaterial that such value is affected by difficulties of reproduction. If it be true that a pipe line under the New York of 1907 is worth more than was a pipe line under the city of 1827, then the owner thereof owns that value, and that such advance arose wholly or partly from difficulties of duplication created by the city itself is a matter of no moment. Indeed, the causes of either appreciation or depreciation are alike unimportant, if the fact of value be conceded or proved; but the ultimate inquiry is oftentimes so difficult that original cost and reasons for changes in value become legitimate subject of investigation, as checks upon expert estimates or bookkeeping inaccurate and perhaps intentionally misleading. Cf. *Ames v. Union Pacific R. R.* (C. C.) 64 Fed., at pages 178, 179. If 50 years ago, by the payment of certain money, one acquired a factory and the land appurtenant thereto, and continues to-day his original business therein, his investment is the factory and the land, not the money

originally paid; and unless his business shows a return equivalent to what land and building, or land alone, would give if devoted to other purposes (having due regard to cost of change), that man is engaged in a losing venture, and is not receiving a fair return from his investment, i. e., the land and building. The so-called 'money value' of real or personal property is but a conveniently short method of expressing present potential usefulness, and 'investment' becomes meaningless if construed to mean what the thing invested in cost generations ago. Property, whether real or personal, is only valuable when useful. Its usefulness commonly depends on the business purposes to which it is or may be applied. Such business is a living thing, and may flourish or wither, appreciate or depreciate; but, whatever happens, its present usefulness, expressed in financial terms, must be its value.

As applied to a private merchant or manufacturer, the foregoing would seem elementary; but some difference is alleged to exist where the manufacturer transacts his business only by governmental license—whether called a franchise or by another name. Such license, however, cannot change an economic law, unless a different rule be prescribed by the terms of the license, which is sometimes done. No such unusual condition exists here, and, in the absence thereof, it is not to be inferred that an American government intended, when granting a franchise, not only to regulate the business transacted thereunder, and reasonably to limit the profits thereof, but to prevent the valuation of purely private property in the ordinary economic manner, and the property now under consideration is as much the private property of this complainant as are the belongings of any private citizen. Nor can it be inferred that such government intended to deny the application of economic laws to valuation of increments earned and unearned, while insisting

upon the usual results thereof in the case of equally unearned, and possibly unmerited, depreciation.

I think the method of valuation applied by the report to land, plant, mains, services, and meters, lawful."

Upon appeal to this court (*Willcox v. Consolidated Gas Co.*, 212 U. S. 19) the increase in the value of the franchise, allowed by the Court below was condemned but the principle of valuation of the tangible assets seems to have been approved. The *quality* of the proof of the present value of the tangible assets was criticized because resting upon unsupported opinion evidence. The same criticism appears in *Mayor of Knoxville v. Knoxville Water Co.*, 212 U. S. 1.

In that case, cost of reproduction was adopted as distinguished from original cost or capitalization and the reversal in this court resulted, among other reasons because of the failure of proof in properly showing cost of reproduction. Unsupported opinion evidence of values, greatly disputed, left the issue in grave doubt.

In the Report of the Railroad Securities Commission (supra) the following was said:

"A fundamental, though not necessarily a controlling, element in value, is cost of reproduction. This is true of property in general; it has been specifically affirmed of railroad property by the Supreme Court of the United States. Eminent railroad men who have appeared before this Commission have stated that in their opinion cost of reproduction or physical value was the most important single element in determining the true value of the railroad as a whole. Indeed, we be-

lieve it to be in the interest of railroads, no less than of those who use them, that the Interstate Commerce Commission should be given broad powers and adequate means for valuation of the physical property of railroads as one element in determining fair value, whenever, in the judgment of that Commission, this is of sufficient importance to warrant such action. This will give the public information which it is entitled to demand, and which can, in our judgment, be better and more economically obtained in this way than in any other. The attempt to oppose a system of physical valuation of this kind tends to give countenance to exaggerated estimates of the amount of water in railroad stocks."

Evidence was introduced in the cases at bar both by complainants and defendants showing the present cost of acquisition and construction of these properties.

This Basis Adopted by State of Minnesota.

The valuation of railway properties upon this basis had already been officially adopted by the authorities of the State charged with the duty of making an adequate valuation. In view of the weight always accorded to the judgment of officials elected and qualified by experience to a particular office or duty, such as that of railroad commissioner, it is a fact to be noticed that under conditions in Minnesota, its Railroad and Warehouse Commission before these suits were started had officially adopted this method of valuation as the most accurate one within reach and had entered upon such a valuation of all of the roads in the State. Furthermore, in these cases and for the purpose of correctly meeting the issues, this basis of

valuation was adopted and voluminous evidence was introduced by the state officials, appellants herein, to thus determine the fair value of these properties.

In the Annual Report of the Railroad & Warehouse Commission of the State to the Legislature for 1906, in a communication covering the work done by the Commission in reducing class and commodity rates pursuant to the joint resolution of the Legislature in 1905, the Commission referred to the valuation of railways in the State which it had under preparation as follows (testimony Charles F. Staples, Commissioner, Vol. 6, N. P. 2739):

> "In connection with this work, the Commission is conducting the work of having the railway properties within the State valued as a basis for determining what are reasonable earnings for the various companies."

In the Annual Report of the Commission to the Legislature for the year 1907, the Commission again referring to its investigation entered upon in 1906, to determine the value of the physical properties of the railways in the State, said:

> "The chief purpose of this valuation is to establish a basis for the regulation of intrastate rates. It is, however, further expected to throw light on the question of the fairness of the tax upon railway gross earnings that is now levied."

The Commission in its report further said:

> "It is uniformly held that the cost of reproduction is one of the very important elements in determining what is a reasonable rate and certainly

is the strongest kind of evidence of the fair value of the property. The Commission has always recognized the carrier's right to earn a reasonable return on a fair valuation of its property, and has always had this in mind in every rate adjustment it has made. The valuation will be of great value in sustaining the Commission and the Legislature in pending litigation should the contention be made that the rates in controversy will not produce a fair return on the property used, and it can be used in any further re-adjustment of rates that the Commission may deem it advisable or necessary to make."

(See Master's Report, Vol. 1, N. P., p. 243.)

The opinion below (Vol. 1, N. P., p. 418) examined the evidence before the Master demonstrating the values of these properties upon various bases and the reasons why values based upon original cost or market quotations were less persuasive in these cases than upon present cost of reproduction and then proceeds:

"In view of these facts the Master rightly decided that the cost of reproducing this property new was a more rational and reliable measure of its real value than the original cost of its acquisition and construction or the market values of the stocks and bonds of the Companies and upon that basis he made his findings.

The Railroad Commission seems to have reached the same conclusion at an earlier date, for in the first part of the year 1906, before these suits were commenced, they had employed Mr. Dwight C. Morgan as their engineer, and had instructed him and had requested the railroad companies to find the respective values of their railway properties in Minnesota on the basis of the cost of their reproduction new. This basis is described in the instructions of the Commis-

sion to the companies under date of March 12, 1906, in these words:

'In estimating the value of the physical, real and personal property of the railway companies in the state of Minnesota, an estimate of the cost of reproducing them new is deemed essential as the prime factor. In respect to real estate and construction, this prime estimate is to be made as though the existing railways were not constructed and the regions through which they now extend were occupied as now, by the settlements, improvements, and varied industries. * * * The present value of the physical properties of the railways will be obtained by deducting from the cost of reproduction of deteriorations by time and use, on the date corresponding to that of the estimated cost of reproduction.'

A schedule of about 40 items originally suggested by the Commission, and perhaps subsequent somewhat modified, was used by both parties in these cases, and their evidence was directed to the values of these items on the basis of the cost of their reproduction new."

It therefore appears that the Commission of Minnesota is committed officially to the cost of reproduction as *"the strongest kind of evidence of the fair valuation of the property;"* it is also committed to such evidence as of *the greatest value in the pending litigation* in determining whether the rates in controversy produce a fair return upon the property used.

The Minnesota Commission employed Mr. Morgan to assist it in determining the present cost of reproduction and the present value of the physical properties of the railroads in this State, and his report dated December 1, 1908, to the Commission is in evidence as Complainant's Ex. Morgan (N. P.) (Vol. 10, N. P. Rec.).

Mr. C. F. Staples, one of the defendant Commissioners, testified (N. P. Rec. Vol. 6, p. 2625) that Morgan's work was done "under the direction of the Commission" and that his results "are the official findings of the Commission."

In his report, Morgan states as follows:

> "It is unnecessary for me to discuss at length the reasons for the adoption of the general plan by which the work has been carried to a conclusion, other than to state that it has afforded probably *the most stable basis* that can be reasonably devised for systematic and thorough consideration of the problem of physical values, resembling in some respects the inquiry into the value of Pacific Railroads made in 1887 under the direction of the United States Senate Comsion, and with which work I was intimately associated, and it also has features of the Michigan and of the Wisconsin Railroad Appraisals made for taxation purposes."

From his report it further appears that on March 12, 1906, he forwarded to each of the railroad companies blank forms upon which to schedule and appraise the physical elements of the properties. These forms follow in the main the Classification and Construction Accounts prescribed by the Interstate Commerce Commission and called upon the railroads to inventory and compute the present cost of acquiring and constructing their properties. In his letter of instructions to the carriers, found in his report, the intent of the Commission is stated to be "to appraise the value of railroad properties in the State of Minnesota."

In addition to the information furnished him by the railways he conducted an examination of his own into the various items of physical property and between the months of May and December, 1907, made an inspection of substantially all of the mileage in the State, aggregating in total trackage 10,437 miles. Morgan's Estimates "A" and "B."

In making a return of his work to the Commission he reported his results in two sets of tabulations which he designated, respectively, Estimate "A" and Estimate "B."

Estimate "A" is shown from his report and testimony in these cases to be based upon the plan outlined in his letter of instructions to the railways and in conformity with the officially published views of the State Commission and his own views as an engineer, charged with the duty of determining the present value of the physical properties.

Estimate "B" he testified (Vol. 5 N. P. p. 2280) "has been prepared under direction of the counsel for the Commission and I have done that just as they wished it."

Estimate "B" is Defendant's Exhibit "OO," Vol. 9, N. P.

Estimate "A" is Defendant's Exhibit "QQ," Vol. 9, N. P.

The differences between Estimates "B" and "A" are mainly in Item 1, "Land for rights-of-way, yards and terminals," and 29 "Adaptation and Solidification of Roadbed."

The Minnesota Commission in its Annual Report for 1907 said in reference to the difference in value

of land for right-of-way purposes and for agricultural purposes:

> "It is everywhere recognized, however, that the value of land for right-of-way is different from its value for agricultural purposes. In order, therefore, to ascertain the value of right-of-way it still remained for the Commission to decide what is the ratio between the value of farm lands and the value of adjoining right-of-way land. The Commission has decided on the basis upon which it will fix the value of the right-of-way, but it has not made public its decision. In arriving at its decision as to the ratio that should be established between the value of farm lands and the valuation of right-of-way, the Commission has been guided to a considerable extent by the prices that are being paid for land for right-of-way lines that are now being constructed or have recently been built."

It will appear from Morgan's report, and later in this brief, that in determining the present value of railway right-of-way and terminals there was agreement between Morgan and the representatives of the railroads in the fundamental proposition that lands available for, or devoted to railroad use, cost substantially more than contiguous lands not so used or available, and in recognition of this principle a so-called multiple was agreed to be proper in showing a fair *average relation* between the value of adjoining lands devoted to residence, business or farm uses and railroad lands. To illustrate, it will later appear that Morgan and the railroad engineers agreed that *on the average* in valuing country right-of-way it was fair to multiply adjoining farm land values by three in order

to state a fair average cost or value of railroad right-of-way.

Estimate "A" (Defendant's Exhibit "QQ" Morgan, N. P.) shows the values of Northern Pacific lands in the state upon this basis, but after this estimate was prepared and because of a disagreement by counsel for the state with the principles approved by the State Commission and its accredited engineer Morgan, he was required to return his Estimate "B" (Defendant's Exhibit "OO," N. P.) showing the value of these lands without multiple applied, which meant the value of such lands based *not upon railroad use* but upon values of adjoining lands devoted to other and less valuable uses. (Morgan 5, N. P., p. 1838.)

Morgan also recognized (See Complainant's Exhibit Morgan, N. P., Vol. 10, N. P. Record, his sub-title "Adaptation and Solidification") that there is a greater value in an old and seasoned roadbed than in one newly constructed.

Thus he states:

> "The newly made excavations wash and slip, the ditches fill from the action of the elements, the embankments settle and the track superstructure is in almost constant need of attention; resurfacing, lining and dressing of ballasted and unballasted track is necessary, waterways become clogged up, bridges settle or go out of line, station grounds are to be improved and finished, scattered and unused material must be picked up and stored, in fact, all the loose ends which are the immediate sequence of construction must be gathered in and the property brought to an orderly condition.

> These items cannot be regarded as contingencies, because they are not unforeseen, but on the contrary they are expected and encountered in the development of every railway and should, therefore, be recognized as a part of the expense attributable to reproducing the equivalent of an established line, possible of accomplishment only in proper order and due course of time."

He expressed this value in his Item 29 by an allowance of the amount shown therein which was computed upon the basis explained in his testimony and report. This item was questioned by counsel for the State and denied as a proper element of value in the properties and in Defendant's Exhibit "OO," Morgan, it is subtracted from the totals of the other items.

In each of his Exhibits "OO" and "QQ" Morgan added a column for the purpose of expressing his opinion of the difference between cost of reproduction new and present per cent of condition, after subtracting depreciation existing in certain items of the property such as ties, rails, bridges, buildings, etc. The subject of depreciation was adequately considered before the Master and will be referred to later.

Morgan testified (Vol. 5, N. P. 2280, et seq.) in support of his Estimate "A" values.

Counsel for the State contended in the Court below for the basis expressed in Estimate "B" (Defendant's Exhibit "OO," Morgan) taking the position in effect that the value of railroad lands should not be fixed with reference to their value for railroad use, but (1) upon actual cost and (2) if not cost, then upon the basis of the value of adjoining lands devoted to other uses, and that there should be no allowance for the

added value in the roadbed resulting through lapse of time and labor expended upon it in bringing it to present condition.

In view, therefore, of the direct conflict between the views of the Railroad & Warehouse Commission and Engineer Morgan, on the one hand, and counsel representing the defendants below on the other, as well as the further fact that after a patient and exhaustive examination of the results reached by Morgan, the Master and lower Court were compelled to reject Morgan's method and results, it seems important to further examine the proof of values shown in the record.

Cost of Reproduction of Lands and Terminal Grounds.

Cost of reproduction being the question now under consideration, it is apparent that in dealing with railroad lands, the phrase means present cost of acquiring them. Cost of reproduction of roadbed, track, structures, equipment, etc., means present cost of constructing them. It is obvious that in determining the value of an article, a piece of property, a building or anything that is properly classed as physical property, the price or cost of duplicating it or acquiring another like it is one of the usual and important questions for consideration. If it is a species of property that is desirable, efficient for its uses, profitable to its possessor, well made, constructed or located, common knowledge shows that the cost of duplicating it is usually the minimum of value to the present owner as well as to him who would acquire it. If it has depreciated in physical condition below a new one of the same species and a new one may readily be obtained, its

present value is ordinarily less than the cost of acquiring a new one of similar kind.

On the other hand, if it is a kind of property not readily duplicated, is in good condition and desirable because profitable to its owner, common knowledge shows that present cost of acquisition or construction is ordinarily less than its real value.

The market value of land at the present time measured by the uses to which it is plainly adapted is the surest guide to present value.

Boom Company v. Patterson, 98 U. S. 403;
Chicago, Burlington & Quincy R. R. Co. v. Chicago, 166 U. S. 226, 250.
2 Lewis, Eminent Domain (3rd Ed.), Sec. 706; also p. 1234 and cases cited.

The cost of reproduction necessarily leads to the question of market value or cost in the market of acquiring the property in question.

> "The market value of property is the price which it will bring when it is offered for sale by one who desires, but is not obliged to sell it, and is bought by one who is under no necessity of having it. In estimating its value all the capabilities of the property, and all the uses to which it may be applied or for which it is adapted, are to be considered, and not merely the condition it is in at the time and the use to which it is then applied by the owner."
>
> Lewis on Eminent Domain (3rd Ed.), Sec. 706.

Proceedings to condemn private property for public use result in an enforced sale by process of law under

the fundamental rule that just compensation must be paid. This means in every case that the fair market value must be paid. The same considerations obtain in finding that value as in case of a sale between private parties, hence the rules of law in cases of condemnation by power of eminent domain furnish the truest guide to find market price or market value.

In *Boom Company v. Patterson*, 98 U. S. 403, the Supreme Court said:

> "In determining the value of land appropriated for public purposes, the same considerations are to be regarded as in a sale of property between private parties. The inquiry in such cases must be what is the property worth in the market, viewed not merely with reference to the uses to which it is at the time applied, but with reference to the uses to which it is plainly adapted; that is to say, what is it worth from its availability for valuable uses. Property is not to be deemed worthless because the owner allows it to go to waste, or to be regarded as valueless because he is unable to put it to any use. Others may be able to use it, and make it subserve the necessities or conveniences of life. Its capability of being made thus available gives it a market value which can be readily estimated.
>
> So many and varied are the circumstances to be taken into account in determining the value of property condemned for public purposes, that it is perhaps impossible to formulate a rule to govern its appraisement in all cases. Exceptional circumstances will modify the most carefully guarded rule; but, as a general thing, we should say that the compensation to the owner is to be estimated by reference to the uses for which the property is suitable, having regard to the existing business or wants of the community, or such as may be reasonably expected in the immediate future."

And again:

"The views we have expressed as to the justness of considering the peculiar fitness of the lands for particular purposes as an element in estimating their value find support in the several cases cited by counsel. This, in the matter of Furman Street (17 Wend, 669), where a lot upon which the owner had his residence was injured by cutting down an embankment in opening a street in the City of Brooklyn, the Supreme Court of New York said that neither the purpose to which the property was applied, nor the intention of the owner in relation to its future enjoyment, was a matter of much importance in determining the compensation to be made to him; but that the proper inquiry was, 'what is the value of the property for the most advantageous uses to which it may be applied?' In *Goodwin v. Cincinnati & Whitewater Canal Co.* (18 Ohio St., 169), where a railroad company sought to appropriate the bed of a canal for its track, the Supreme Court of Ohio held that the rule of valuation was what the interest of the canal company was worth, not for canal purposes or for any other particular use, but generally for any and all uses for which it might be suitable. And in *Young v. Harrison* (17 Ga. 30), where land necessary for an abutment of a bridge was appropriated, the Supreme Court of Georgia held that its value was not to be restricted to its agricultural or productive capacities, but that inquiry might be made as to all purposes to which it could be applied, having reference to existing and prospective wants of the community. Its value as a bridge site was, therefore, allowed in the estimate of compensation to be awarded to the owner."

See also 2 Lewis, Eminent Domain, Third Edition, page 1234, and cases cited.

That the carrier owning valuable terminals has in law the right to the full and true value of them as measured by every legitimate standard is beyond question.

> "If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase."
>
> *Wilcox v. Consolidated Gas Company of New York*, 212 U. S. 19.

Although it may be difficult to compute the full value of terminals, such as those under consideration, there is little real difficulty in ascertaining a minimum value. Courts for centuries have tried and determined questions relating to the market value of lands, and the rules of law are plain and simple, and the accepted methods of proof are equally simple and easy of access.

> "The market value of land is usually declared to be not what the land would bring at a forced sale, but what it would bring in the hands of a prudent seller, at liberty to fix the time and conditions of sale. What property would bring at a fair public sale, where one party wanted to sell and another wanted to buy, may be taken as a criterion of its market value."
>
> 10 Am. and Eng. Encyclopedia of Law, page 1152, and cases cited.
> *Boom Company v. Patterson*, 98 U. S. 403.

The case of *Goodwin v. Cincinnati Whitewater Canal Co.*, 18 Ohio 82, 169, cited with approval by the Supreme Court in the case of *Boom Co. v. Patterson*,

supra, deserves attention. There was a case of condemnation of property by one public service corporation of the property of another, a canal company. The right of the latter to just compensation for its property was not measured by any lesser standard than exists in case of private persons. It was not measured by original cost nor by original investment; neither was it measured alone by present use but "generally for any and all uses for which it might be suitable."

The principle here stated is conclusive upon the question of the proper basis to be adopted for ascertaining the present value of these railroad properties.

It may best be illustrated thus: It is conceivable that government for its own sovereign purposes might require portions of the lands of a railroad company and proceed by condemnation to force a sale. Conditions may readily be supposed under which the government might take portions of the terminals at Duluth or St. Paul. In such event, what is the rule that would be applied in fixing the amount to be paid the railroad company? Certainly not the original cost, because the test is "what is the property worth in the market?" (*Boom Co. v. Patterson, supra.*) Certainly not the value of contiguous lands available only for residence or business purposes, because such values fall short and do not reflect the higher value resulting from higher uses to which the property "is plainly adapted."

There is but one test, and that applies to every citizen, whether he be public service corporation or private individual. His property cannot be taken from him except he be paid the fair value, ascertained by finding "what is the property worth in the market, viewed not

merely with reference to the uses to which it is at the time applied, but with reference to the uses to which it is plainly adapted, that is to say, what is it worth from its availability for valuable uses."

So in the case supposed, the government would be compelled to pay the market price of the land based upon the value resulting from railroad use or any higher use which under the evidence the lands might reasonably have.

This is the true rule not only applying to a taking by governmental power of the physical property itself, but also to a taking of the use of it at less than its fair market value. Thus in *Reagan v. Farmers' Loan & Trust Co.*, 154 U. S., at p. 410, this Court said:

> "If the State were to seek to acquire the title to these roads, under its power of eminent domain, is there any doubt that constitutional provisions would require the payment to the corporation of just compensation, that compensation being the value of the property as it stood in the markets of the world, and not as prescribed by an act of the Legislature? Is it any less a departure from the obligations of justice to seek to take not the title but the use for the public benefit at less than its market value?"

To the same effect:

> *Ames v. Union Pacific Ry. Co.*, 64 Fed. 165;
> *San Diego Land & Town Co. v. National City*, 74 Fed. 79, 83.

Furthermore, Mr. Justice Brewer said in the Ames Case (supra, p. 176):

"Property invested in railroads is as much protected from public appropriation as any other. If taken for public uses, its value must be paid for. Constitutional guaranties, to this extent, are explicit; and in such condemnation proceedings no inquiry is permitted as to how the owners have acquired the property, provided only it be legally held by them. If a farm belongs to an individual, and the public seeks to take it, it must pay its value, and is not permitted to diminish the price by proving the owner acquired the means of purchase by immoral or disreputable practices. He may have made his fortune dealing in slaves, as a lobbyist, or in any other way obnoxious to public condemnation; but if he has acquired the legal title to the property, he is protected in its possession, and cannot be disturbed until the receipt of its actual cash value. The same rule controls if railroad property is sought to be appropriated. No inquiry is open as to whether the owner has received gifts from state or individuals, or whether he has, as owner, managed the property well or ill, or so as to acquire a large fortune therefrom. It is enough that he owns the property—has the legal title; and, so owning, he must be paid the actual value of that property. If he has done any wrong in acquiring or using the property, that wrong must be redressed in a direct action therefor, and cannot be made a factor in condemnation proceedings. These propositions in respect to condemnation proceedings are so well settled that no one ever questions them. *The same general ideas must enter into and control legislation of the kind before us.* The value of the property cannot be destroyed by legislation depriving the owner of adequate compensation. The power which the Legislature has is only to prescribe reasonable rates, not any rates. The language of the constitution of Nebraska in respect to the matter is (Const 1875, Art. 11, §4), 'And the Legislature may, from time to time,

pass laws establishing reasonable maximum rates of charges for the transportation of passengers and freight on the different railroads in this state.' But the foundation on the idea of reasonableness is justice. That which is unjust cannot be reasonable, and when the strong arm of the Legislature is laid upon property invested in railroad transportation, it must be so laid as to do justice to such investors. There can be no justice in that which works to such investors a practical destruction of their property thus invested. It must always be borne in mind that property put into railroad transportation is put there permanently. It cannot be withdrawn at the pleasure of the investors. Railroads are not like stages or steamboats, which, if furnishing no profit at one place and under one prescribed rate of transportation, can be taken elsewhere, and put to use at other places, and under other circumstances. The railroad must stay, and, as a permanent investment, its value to its owners may not be destroyed. The protection of property implies the protection of its value."

If the principles applying in condemnation proceedings to ascertain value apply equally to legislative proceedings depriving owners of railroad property of revenues (*Ames v. R. R., supra; Reagan v. Farmers' Loan & Trust Co., supra*, etc.), it is plain that present value of these systems, based upon every reasonable use, whether present or fairly prospective, is the test. This is true whether a portion or the whole of the property is taken. It is equally true whether it is the property itself that is appropriated or its earning power, which is equally property.

These railway properties, therefore, are required to be valued not by the narrow basis of their present use

but by considering the "uses for which the property is suitable, having regard to the existing business or wants of the community, or such as may be reasonably expected in the immediate future" (*Boom Co. v. Patterson, supra*). That is to say, with reference to valuable uses to which they are plainly adapted—their availability for valuable uses.

If, as said in *Reagan v. Farmers' Loan & Trust Co., supra*, the taking of these roads by government would require the payment of compensation equivalent to "the value of the property as it stood in the markets of the world" that value must be ascertained by due consideration to the highest available use of the properties, present and fairly prospective.

With these principles in mind, it becomes plain that values based upon present earning power might not and clearly in these cases would not fully measure the greater values that presently exist because of the increasing availability of the properties for more valuable uses and therefore increasing income. To so limit the consideration of values would be to base values only upon actual present use and to deny the existence of values because of availability for greater and more valuable use flowing from the growing wants of the communities served by these lines. This would be to commit the same error that was pointed out by this Court in *Boom Co. v. Patterson, supra*, and in the Ames and Reagan cases, supra.

These records contain ample evidence of the continuous growth of these properties, year by year, in their total business moved and revenues earned.

The Annual Reports for the years 1907, 8 and 9, filed and attached to Vol. 1 in each case contain a com-

plete exhibit of earnings, expenses and taxes, and net results of the business for this considerable period.

They are efficiently located and managed (Master's Report, Vol. 1, N. P., p. 244-245). Their owners are year by year increasing the use to which the growing business of the territories served makes them available and are aiding and encouraging this growth in every way. These properties have therefore a continually increasing utility and therefore—value, that is equally protected by constitutional guaranty and in fixing values considerations based not only upon present use but also "such as may be reasonably expected in the immediate future" are equally entitled to consideration.

That such values exist and were deemed by the Court below an important factor for consideration appears from the opinion (N. P., Vol. 1, p. 431):

> "An investment in a railroad which operates in many states is subject to the regulation of its business by many governments. Its owners owe the duty to the governments and to the public to operate their railroad continually in days when its operation is unprofitable as well as when it is remunerative, a duty they must discharge under the penalty of the forfeiture of their property if they fail. In view of these facts, they ought to be permitted to receive a return large enough to enable them to accumulate in prosperous days a surplus sufficient to enable them to protect their property in days of disaster and to make their average return through days of prosperity and of adversity fair and just. The lands in Minnesota through which these railroads extend are fertile and productive. The cities, villages, and towns they reach are rapidly increasing in population and wealth, and the people they serve are

thriving and successful. The evidence satisfies that the railroads are maintained in excellent condition, that they are efficiently and on the whole economically managed and operated, and are rendering commendable service. Justice to the thriving people they serve does not require that the owners of these railroad properties should be deprived of a fair return upon their values. To deprive them of such a return would prevent advances and tend to compel reductions in the wages and salaries of their employes, would tend to prevent the extension of their lines into portions of the state where the development and accommodation that railroad service assures would be welcome and may be needed, to deteriorate the character of the service they render, and to retard the general prosperity."

Basis Adopted for Determining Land Values.

In ascertaining values of lands to be incorporated into the Report to the State as called for by Engineer Morgan showing "Cost of Reproduction," usual and customary methods, and those universally recognized by courts, were followed and opinion evidence from witnesses qualified by experience was procured. These witnesses before reporting their results made careful inspection and examination of the property in detail and utilized actual sales and prices within their knowledge as a guide in testing their own judgment. They were not advised of the purpose of this appraisement nor the use that was to be made of it, other than that it was required in response to a demand by the state for a valuation of railroad properties. Thus one of the appraisers, O. L. Taylor of St. Paul, testified (Vol. 2, G. N., p. 362):

"Q. What intimation was given you as to whether it would be preferable for the railroad companies to have a high or a low valuation?

A. There was no intimation given; in fact, none of us, to my knowledge—I know as far as I was concerned, I did not know, until long afterwards, to what purpose this appraisal was to be put or for what purpose it was being obtained. Mr. Cooper stated to me (and it is my impression that he stated before the three of us) that this appraisal was made either at the request of the state or for some state purposes, but what they were was not disclosed, and we had no occasion to inquire any more closely.

Q. Was anything whatever said about rate-making?

A. Not the slightest allusion to it.

Q. And did you know whether it would be advantageous to the railway companies to have a high valuation or a low valuation?

A. Did not; it was reiterated several times that they wanted a fair and equitable valuation of the property."

Another appraiser, Lester B. Elwood, who participated in the Minneapolis appraisement, also said (2 G. N., p. 557):

"Q. What intimation was given to you, if any, with regard to the purpose for which this valuation was to be made?

A. There was no intimation whatever.

Q. What intimation, if any, was given to you as to whether it was desirable on the part of the railway companies to have a high or a low valuation?

A. There was no intimation of that kind whatever."

Concerning the appraisers of the large terminals,

Morgan said in his report (Vol. 10, N. P. Rec., Exhibit Morgan, N. P.):

> "In personnel, these commissioners were composed of men of high standing in the real estate business and substantial citizens in their respective communities, therefore, the defense of the results of my own inquiries which vary widely from the estimate of these gentlemen, is upon the methods employed and not the men."

Their appraisement was not made for the purposes of this litigation but in order to comply with the demand of the State. Later, when the litigation had progressed to a point where it became necessary to prove the values of these lands, the appraisers were called as witnesses. Their figures were further supported by the records of the companies, showing prices actually paid by them for considerable parcels of right-of-way and terminal lands within recent times, and for just such lands as were under consideration in these cases.

Opinion Evidence Supported by Corroborating Proof.

It will not escape notice that throughout the entire case, figures showing cost of reproduction have been fortified, and, in fact, largely based upon *actual conditions*, both of quantities and prices shown by abundant current experience. In this way the objection often urged against opinion evidence has been overcome. Opinion evidence of market value of lands, or, stated differently, of the cost of presently acquiring lands, as well as present cost of construction of tracks, struc-

tures, etc., unsupported by evidence of actual prices paid, may properly be received with caution.

That objection, however, has been overcome in these cases by ample supporting proof of actual prices paid in recent times and actual transactions carried out in the ordinary course of business and shown by records made at the time. In this way the opinion of complainant's expert witnesses may be tested because they are supported, and, in fact, largely based on actual and recent experience and thus present the best possible evidence.

The land values as proved by complainants in each of the cases and as fixed by the Master are as follows:

Northern Pacific Case.

Terminals in St. Paul, Minneapolis and Duluth—Complainants' Exhibit 9, Cooper—Sub. Minnesota (Vol. 10, N. P. Rec.)	$20,355,912.31
Allowed by Master (Report Vol. 1. N. P. 220)	17,315,869.45
Reduction by Master (14.9%)	$3,040,042.86
Lands outside of terminals—Complainants' Exhibit 9, Cooper (supra)	$4,944,924.60
Allowed by Master (Report, Vol. 1, N. P. 220)	3,708,693.45
Reduction by Master (24.8%)	$1,236,231.15
Total average reduction	16.9%

Great Northern Case.

Terminals in St. Paul, Minneapolis and Duluth—Complainants' Exhibit 9, Hayden (Vol. 6, G. N. Rec.)	$23,535,542.00
Allowed by Master (Report, Vol. 1, G. N., 177)	19,847,366.55
Reduction by Master (15.6%)	$3,688,175.45
Lands outside of terminals—Complainants' Exhibit 9, Hayden (supra)	$7,100,379.00
Allowed by Master (Report, supra)	5,325,284.25
Reduction by Master (24.9%)	$1,775,094.75
Total average reduction	17.8%

Minneapolis & St. Louis Case.

Terminals in Minneapolis—Complainants' Exhibit 29, Cutler (Vol. 6, M. & St. L. Rec.)	$5,709,362.00
Allowed by Master (Report, Vol. 1, M. & St. L. Case, p. 156)	4,784,112.90
Reduction by Master (16.2%)	$925,249.10
Lands outside terminals—Complainants' Exhibit 29, Cutler (supra) and Master's allowance are the same	$1,215,285.00
Total average reduction by Master	13.3%

In reaching these conclusions the Master accepted the appraisement of the committees of real estate men (with certain minor reductions in the Northern Pacific case). He then added but 5% in the case of St. Paul and Minneapolis terminals to cover the value therein reflected by the cost of acquisition and sever-

ance or consequential damages as opposed to the judgment of the complainants' witnesses that a substantially higher percentage was the current experience. Thus it appears that the conservative nature of the Master's judgment, reflected by many years of judicial experience, probably worked injustice to the complainants' claims; in any event, it relieved the result of any possible claim of inflation in values. In Duluth, the Master added 25% for this extra cost for reasons explained in his report (Report, Vol. 1, N. P. 222), and in the opinion below (infra).

In forming his conclusions relating to values of lands outside the great terminals, the conservative nature of the Master's judgment again appears when he reduced the complainants' figures by 25%. (Report, Vol. 1, N. P., p. 224.)

An examination of certain exhibits showing actual average prices per acre paid for rural and village right-of-way in recent times in comparison with the average prices per acre claimed by complainants will clearly demonstrate that the only error committed by the Master in this regard was against the complainants. A fair consideration of the evidence makes it difficult to justify this reduction.

Agreement by State Authorities and Complainants Upon Fundamental Basis of Railroad Land Values.

The record shows that there was substantial agreement between complainants and the state authorities in the proposition that lands known to be available for railroad use cost more in the market than lands not so available or in demand for such purposes. Rail-

road utility is a higher use than ordinary business, residence or farm use and makes for higher cost and therefore higher value.

O. L. Taylor, Appraiser in St. Paul, said (Vol. 4, N. P. 1427):

"Q. On what, in general, is the value of real estate based or predicated?

A. The value of real estate is dependent on the uses to which it can be put, the property having very limited possibilities of use, having a much lower value than property subject to various uses. There are certain kinds of use that, although it may be limited and property can only be used for that one purpose, if the purpose is of the highest sort, that property may have a higher value than some other property for which the uses are of a more trivial character.

Q. In a city of the size and importance of St. Paul, and of the topographical character of St. Paul, how, in your judgment, does the value of a railway use for entrance and terminal purposes compare with any other use to which property may be put, compared with the value of property which can be put to any other purpose?

A. Well, railroad use, desirability for terminal facilities, in a city, is one of the highest usages that can be made of property. There are a few things that would be perhaps classed as a higher use, the very best retail property or some of the finest wholesale sites, but railroad usage, in the city, is one of the best purposes to which property can be devoted, and railroads are willing, and expect to pay, for such property up in the high class of real estate.

Q. And do you consider that that view or that condition is strengthened in a city of the topographical character of St. Paul over what it would be in a flat city.

A. Very decidedly, because the possibilities are actually limited, the areas are restricted, and when you find restricted areas that must furnish the terminal facilities that property immediately becomes of the highest price because they cannot get along without it."

Engineer Morgan states the well known fact thus (Vol. 10, N. P. Exhibit, Morgan, N. P.):

"That only certain property is available for railway uses is manifest; it is often fixed by topographical environments or by its particular eligibility for present needs or future requirements. Choice is therefore not optional with the railroad company in the same sense that it is optional with the individual."

This fact therefore carries conviction to the mind of the owner the instant he is made aware that his land is necessary or even desirable for railroad use, and the urgent necessity of the railroad creates a higher use and a higher market value. This fact is not necessarily limited to railroad use but exists in the presence of urgent demand growing out of necessity on the part of the intending purchaser, whether it be railroad or other corporation, or whether it be individual, but the conditions that bring these forces into play are ordinarily found in the case of lands sought to be acquired for railroad use.

The considerations governing these conditions are well stated in Mr. Morgan's report as follows (Vol. 10, N. P.):

"Right of Way Values.

"For ordinary purposes, the true value of land can be ascertained with a degree of accuracy which in general ought to enable the avoidance of any very wide difference of opinion regarding it, but the acquirement of the lands for railway purposes presents conditions much more difficult to determine.

The purchase of lands for a railroad right of way require the consideration of two elements: first, the fair value of the land taken, and second, the damages to the residue in consequence of a part of the tract having been taken for railroad purposes.

The element of damages is dependent upon a variety of conditions, several of which may be mentioned as: the location and direction of the proposed railroad with respect to the boundaries of the property; the inconveniences and dangers likely to be suffered and attributable to the construction and operation of the line, such as the separation of the owner's house from his barn, or of his barn from his well. The conditions arising and connected with the purchase of right of way are diversified according to individual circumstances and in no small degree is the cost of the land to the railway company affected by the manner of its acquirements, i. e.—by agreement and purchase or by condemnation proceedings; the latter process results in awards often equal to and sometimes in excess of the consideration originally demanded.

The influence of public sentiment for or against the construction of a line of railway is a most potent factor in respect to cost.

In varying degrees, these and other considerations make the lands purchased for a railroad right of way usually more costly than the true or normal value of lands for other purposes.

> The variety of conditions and circumstances which attach to each individual purchase of right of way, if considered separately, could but lead to a maze of uncertainty because the actual cost of the individual parcels acquired ranges between a nominal amount and more than ten times the true value of adjacent lands."

Mr. Thomas Cooper, Land Commissioner of the Northern Pacific Railway Company, stated the fact in the following language (Vol. 7. N. P. Rec. p 3105):

> "A railroad company, in purchasing property, has to pay a higher price than other people, not for every particular tract but for a great deal of what they buy, because of the fact that they have to buy that particular tract; therefore, a new figure of value, if you choose to call it value, is established there, and when we talk of value we are apt to think all the time of its value for other purposes than railroad; but, when the railroad company comes to buy it, there is a use to which the property can be put, manifested by the fact that the railroad company wants to buy it, and immediately this new use or value is added to its price, and the railroad company must pay for it."

These conditions have been by some carelessly ascribed to sentiment, indicating desire to "hold-up" the railroad whose need is urgent and whose ability to pay is recognized. Such sentiments exist at times, without doubt, and in places, but a more correct analysis shows that the conditions in question arise *from the awakened knowledge or conciousness of the owner that his land is in demand or available for a higher use*, which gives to it a higher value in the market, and therefore, justifies him in demanding a higher price. To the railroad it may have far greater value

than the price thus demanded, but, at the least, it is the market value because that is what it is "worth from its availability for valuable uses," consequently it represents the present cost of acquisition.

Engineer Morgan in his Report (supra) also says:

> "The artifices resorted to by railroad companies in their efforts to purchase property at normal prices are not enduring, and once it becomes known, the prices advance sometimes with remarkable increases, and it was found from more than 200 sales of city property to railway companies, that a wide range existed between the normal value and the sale price of the individual purchases made."

In these cases there was, thus, frank recognition by the witnesses on both sides of the fact of higher value of lands in railroad use or available for that purpose.

Agreement in Use of Multiple of 3 in Determining Railroad Land Values in Rural Districts to Produce Fair Average Results.

It was agreed that the railroad market value of rural right of way and terminal grounds at small stations was on an average three times the market value of adjoining lands, dealt with upon the normal basis of purchase and sale for agricultural, farm land, business or residence purposes, between private persons.

Morgan testified on direct examination (Vol. 5, N. P., p. 1919):

"Q. The result of your investigations, then, as I understand, Mr. Morgan, has been that if the inquiry was as to what a railroad company had paid for a right of way through agricultural lands and the smaller communities, at any given time, you could determine that by ascertaining the true value of the lands at that time and multiplying that true value by 3?

A. Yes, when considered on broad grounds. There would be individual exceptions to that, of course.

Q. Well, for instance, when you would reach the entire amount of such lands as were held by the Northern Pacific in the State of Minnesota, your ground would be broad enough, would it not?

A. Yes.

Q. And if, for the purposes of this case, it is to be ascertained what it would cost the Northern Pacific Railway Company to now acquire its right of way and station grounds outside of the three large terminals in the State of Minnesota, upon the assumption that the lands through which that right of way was located had their present value and were in their present condition, it would be necessary to multiply the true value of the lands so taken by three?

A. Yes."

Thomas Cooper, Land Commissioner of the Northern Pacific Railroad Company testified to the same effect (Vol. 2, N. P., p. 215):

"I will explain that after we received the instructions from the State Railroad Commission of Minnesota to prepare a valuation of our railroad in Minnesota, a meeting was held in my office of the various officials of the various roads in Minnesota having charge of the right of way and land matters, the officials who were charged

with the duty of preparing the valuation for their respective companies for this report to the State Railroad Commission. We there discussed very thoroughly the question of what multiplier we should use, the State having instructed us to prepare our report to show these two columns distinctly, the market value and the value for railway purposes. At that meeting, as I say, all the railroads were represented, all were men who had had experience in buying right of way, just as I had had. And as the result of that discussion we concluded that a multiplier of 3, where the property was of an agricultural character, or in the smaller towns and villages, would be about right to cover the difference between the so-called market value and the value for railway purposes, but that in the larger towns and in the cities a much lesser multiplyer would have to be used, which would have to be determined by each company for itself, and we made no attempt to adopt any fixed basis in the larger cities and towns. The multiplier of 3, that I have used here, I find, by checking it with our actual experience, is low. I feel that it is too low."

In the case of large terminals, there was also substantial agreement that the market value of railway properties was also above the normal market value for private uses. (Morgan 5, N. P., p. 1805.)

In order to understand the reasons for this conclusion it must be remembered, as stated above by Mr. Morgan, that the requirements of a railroad company for lands for its line, whether in the city or in the country, are sharply limited to topographical environments and other conditions. The engineer stakes the line according to the grade desired or the location determined upon; choice is therefore not optional, except within narrow limits. In large terminals,

where available area is restricted and cost is high, choice in every practical sense wholly disappears; the need is urgent for the particular land and no other land can be made use of. For these reasons the principles above stated apply throughout the entire line. and the railroad use creating a higher value, appears in every railroad purchase, varying only in degree.

The Findings and Opinion Below and the Evidence in Support.

Terminal Values.

The lower Court said (Vol. 1, N. P. 419):

"The first and largest item on the schedule was 'land for right of way, yards and terminals,' In the case of the Northern Pacific Company the evidence on behalf of the complainant tended to show that the cost of reproducing this item was about $25,000,000. The claim of counsel for the Commission now is that the value of this item does not exceed $9,498,099.27, and the Master found that the cost of its reproduction and its value were $21,240,562. In the testimony the item is divided into lands for rights of way, yards, and terminals in St. Paul, Minneapolis, and Duluth, which for brevity will be called 'terminals,' and other lands for rights of way, yards and sites for stations through the other cities, towns and villages and through the country, which will be termed 'lands outside of terminals.'

* * * * * *

"On the other hand, the evidence for the complainants was, as to the terminals in the three cities, the testimony of three residents of each of

those cities engaged in the real estate business, of long experience and accurate knowledge of the values of real estate in their respective cities, as to the values of the terminals of each of these companies, the testimony in the Northern Pacific case of Mr. Cooper, the land commissioner of that company, who was in charge of its rights of way and had purchased for it since 1903 property for which there had been paid $6,139,542.35, and who had a general knowledge of the property in question and its value, the testimony in the cases of the other companies of officers thereof similarly qualified, and evidence of purchases and sales which tend to sustain the evidence of these witnesses."

* * * * * *

"In each of the three cases the Master added to the values of the terminals in St. Paul and Minneapolis, established by the testimony of the real estate dealers and Mr. Cooper, 5 per cent. for the cost of acquisition and consequential damages and to the values of the lands for terminals in Duluth, verified by the witnesses for the companies, 25 per cent. for railroad value and the cost of acquisition and consequential damages, and from the values of lands outside terminals, established by the evidence for the companies, he deducted 25 per cent. The result was that his ultimate finding of the value of the first item on the schedule was about $4,000,000 below the value which the testimony of all the witnesses except Mr. Morgan, sustained, about $6,000,000 above that which Mr. Morgan's testimony supports, and about $11,000,000 above the amount which counsel for the defendant now urge the court to adopt. This finding of the Master is assailed because he allowed 5 per cent. of the value of the terminals for cost of acquisition and consequential damages, because he increased the values of the terminals at Duluth, established by the testimony of the real estate dealers, 20 per cent. for the reason that they failed

to give due weight to the value of these terminals for railway purposes, because the companies' estimates of the value of this item included an addition to the values of the St. Paul and Minneapolis terminals fixed by the real estate dealers of 25 per cent. thereof for railroad value, and because he failed to follow the theory of Mr. Morgan and to adopt the value which Mr. Morgan would have found if he had discarded his multiples.

But the evidence in this case is conclusive, nay, we may say it is without conflict, that every railroad company is compelled to pay more than the normal market value of property in sales between private parties for the irregular tracts it needs and acquires for rights of way, yards, and station grounds. The defendant's witness, Mr. Morgan, testified that in his opinion the companies necessarily paid three times the normal value for the lands outside of the terminals in the three cities and 75 per cent. more than the normal value for their terminals within those cities. The Master in effect found that the cost of reproduction and the present value of the lands for the terminals in the three great cities, including therein all cost of acquisition, consequential damages, and the value for railroad use which he allowed, was only about 30 per cent. more than the normal value of the lands in sales between private parties. He found the value of the lands outside the terminals to be only twice their normal value. Findings of lower values would have been contrary to the great weight of the evidence and without substantial support therein."

Evidence Relating to Terminal Values.

Thomas Cooper (Vol. 2, N. P., p. 122), Land Commissioner of the Northern Pacific Railway Company, testified to 26 years' experience with that company at

various points on its line and in various occupations. Since May 1st, 1890, his duties have continuously had to do with the purchase and handling of lands for right of way and terminal purposes. From June, 1895, to July, 1901, he was Western Land Agent, between July, 1901, and April, 1904, he was Assistant to the President and General Manager, and on April 1st, 1904, he was appointed Land Commissioner, holding that office down to the time of his testimony. Regarding his duties as Land Commissioner, he testified (Vol. 2, N. P., p. 124):

> "As Land Commissioner, I have charge of the land-grant of the Company for the entire system; and I also have charge of the right-of-way of the Company, the purchasing of additional property which the Company requires for right-of-way and for other purposes, the leasing of the right of way, and I am also second vice-president of the Northwestern Improvement Company, a subsidiary corporation of the Northern Pacific Railway Company, and in that capacity have charge of all of its land interests.
>
> * * * * * *
>
> In the various positions that I have held it has been necessary for me to go over every part of the Northern Pacific System frequently, and I cannot recall at this minute any part of the system that I have not been over; I am especially familiar with all of its properties in the larger cities—its large terminal properties—having personally walked over all of those while I was General Manager of the Company.
>
> * * * * * *

I had the general knowledge acquired in fulfilling my duties as Land Commissioner, which necessarily made me familiar with land values along the whole line of the railroad, excepting in the cities, and, to some extent, in the cities. I have purchased, since December 1, 1904 (when I was placed in charge of the right of way of the Company), something like (or, to be exact) $6,139,542.35 of property scattered along the whole line from St. Paul to the Pacific Coast."

Exhibit 8, Cooper (Vol. 10, N. P.) is a detailed table of the location, nature and price of the various items of property purchased by the witness and making up the above large sum disbursed by him. The aggregate in amount of mileage, acreage and money cost established the qualification of the witness beyond controversy.

Exhibit 9, Cooper (Vol. 10, N. P.) is the valuation by states (and divided between terminals and lands outside of terminals) of right-of-way and other operating property of the Northern Pacific as of June 1, 1908.

Concerning the preparation of this exhibit, Cooper testified (Vol. 2, N. P., p. 126, et seq.):

"When I was advised that I would be required as a witness in this case to testify as to the value of the right-of-way and operating property, I started in to prepare this statement in the following manner: Some two years ago the Company was called upon by the State of Minnesota to prepare a valuation of its property in the State, and I was instructed to prepare the value for that report of the right-of-way and real estate used in its operation. About a year ago I was instructed to prepare myself to testify as a witness in the

Spokane rate case on the value of the right-of-way and operating property of the Company, covering its entire system, which I did, and testified in that case.

(127) And I also prepared the Minnesota statement for the State Railroad Commission as explained above.

* * * * * *

In St. Paul, Minneapolis and Duluth, I employed local real estate dealers, three in each town.

(128) In St. Paul, O. L. Taylor, W. C. Read and J. J. Watson; in Minneapolis, L. B. Elwood, F. E. Barney, J. Arthur Ridgeway; in Duluth, E. C. Little, J. D. Stryker and Luther Mendenhall. These men were instruced to prepare a conservative estimate of the cost of reproducing the properties owned by the Company in each of their respective cities.

* * * * * *

Only the real estate, of course; and they were furnished maps showing the properties which the Company owned.

* * * * * *

They were instructed to assume the property to be unimproved; simply to estimate the value of the bare real estate. They prepared their figures, taking two or three weeks to make them up in each case, and then submitted them. I went over their figures with them, with some care and in detail, discussing with them the basis on which they had arrived at their figures, checking their statements with my own knowledge of the situation, and with the actual price of property which the Company had purchased, and in no case did I increase the figures submitted by the real estate men. I did make some slight

decreases. And I then added to those figures my judgment as to the cost of improvements and the damages to other property not purchased, that the Company would likely have to pay in buying the property; or, I might put it, I added a percentage to the figures of the real estate men to represent the difference between what the Commission in its form of report submitted to us was the right-of-way value and the real estate value, and from those figures I made up, so far as the three cities named are concerned, my estimate for the State Railroad Commission."

The acreage and values placed upon the Northern Pacific terminals in Minnesota are stated in this Exhibit 9, Cooper, as follows:

Minnesota.	Acres.	Value Per Acre	Total Value.
Duluth Terminals ...	600.91	$8,578.99	$5,155,203.75
St. Paul Terminals ...	751.68	13,180.99	9,907,889.34
Minneapolis Terminals.	309.87	17,080.77	5,292,819.22
Total Terminals in State.....	1,662.46	$12,244.45	$20,355,912.31

Note.

We pause at this point to notice the charge contained in Appellant's brief (p. 171 et seq.), that in the Northern Pacific case it was proven by Mr. Cooper that 42% of the total area of Northern Pacific terminal lands in St. Paul, Minneapolis and Duluth were not in use for

railroad purposes and therefore that the inclusion of these areas was erroneous. Appellants go further and assert, in spite of the plain showing in the record, that 42% in value should be deducted from the values of the terminal lands claimed in the Northern Pacific case.

At the outset, the differences in acreage between Complainant's Exhibit 9, Cooper, and Defendant's Exhibit "M" Cooper, are accounted for by the fact shown on the exhibits, that Exhibit "M" was prepared April 9, 1907, and Exhibit 9 as of June 1, 1908. Mr. Cooper explained (2 N. P., p. 426) that Exhibit "M" is a copy of an exhibit prepared by him in the so-called Spokane Rate Case, and on account of the difficulty of bringing it down to date a year later, it was accepted by Appellants as sufficient for their purposes.

It is true that approximately 42% in acreage of these terminal lands are shown in Exhibit "M," Cooper, not, at that date, to have been in actual railroad use but that portions of them were leased to others on short time leases and other portions were lying vacant. We shall not here debate the question whether all or parts of these areas, although not in actual present use, were not properly included in these cases.

Appellants (Brief p. 174) quote only a portion of Mr. Elliott's testimony (4 N. P. pp. 1230-1232) giving the reasons why these lands were proper and wise purchases as a provision for necessary growth and expansion, and we invite consideration of his entire statement on the subject.

The inclusion of these lands was fully explained and understood in the hearing before the lower court.

Their extent and value was fully shown and it plainly appeared that although they comprised 42% in acreage, they at the same time were of so insignificant a value, in relation to the total value of the Minnesota terminals or the total value of the Northern Pacific in the state as not to justify further consideration. Therefore, appellants failed to file any exception to their inclusion in the schedules, in the lower court, nor did they assign error in this court in regard to them.

To demonstrate the insignificance of the question involved and the impropriety of appellant's objection now urged for the first time, the record relating to the acreage in St. Paul and Minneapolis may be referred to.

Mr. Cooper testified (2 N. P. p. 244) as follows:

> "There is no property included in Exhibit 9 that is what you might call surplus property; that is to say, property that we were obliged to purchase that we did not need. We leave the title to all of that in the Improvement Company, and none of that kind of property is included in Exhibit 9."

The property embraced in Cooper Exhibit 9 includes all of that embraced in Defendant's "M" Cooper, therefore, this answer shows that none of the 42% in area is surplus property, but all was purchased and is intended for use by the railroad.

Mr. Howard Elliott, President of the Northern Pacific, testified (4 N. P., p .1230), that on the system in all states, including Minnesota, the company has acquired about 1,600 acres of land in terminal properties held for future expansion. The 42% in Min-

nesota referred to is included in these 1,600 acres, and Mr. Elliott testified (4 N. P., p. 1231) that all of these 1,600 acres have been bought since he became President of the company. He had held that office about five years prior to date of this testimony (4 N. P., p. 1217). Therefore, it is plain that the 42% of acreage complained of had been purchased since 1903.

Complainant's Exhibit 8, Cooper, (10 N. P.) is a schedule of right-of-way and terminal lands purchased by Thomas Cooper from December 1, 1904, to May 31, 1908. It covers the entire system and shows the cost of terminal property purchased in St. Paul at $353,526.69. In Minneapolis it shows two items aggregating $248,481.19. Appellants fully investigated this question in the hearing below as will be seen from Defendant's Exhibit "C," Cooper (9 N. P.), offered in evidence in Vol. 2, N. P., p. 172, where Mr. Cooper went fully into detail regarding these additional terminal properties in St. Paul, aggregating the sum shown in the first item in Cooper Exhibit 8, above referred to.

The sum of these items is $600,007.88, which if all improperly included, would be but 2/3 of 1% of the total value of the Northern Pacific operating property in Minnesota as found and allowed by the Master. Even more insignificant values are involved in the acreage in Duluth (Stryker, 2 N. P. p. 454, Complainant's Exhibit 21, Stryker, 10 N. P.).

It will be noted that the State Engineer, Morgan, agreed with Cooper in the area of these terminals after Morgan went over all of them on foot. (5 N. P. p. 1791 : 1822.) The state included all of these

areas in its appraisement. Under this showing it is perfectly plain that no real issue is involved in the inclusion of these areas and that is the reason why no exception was filed below nor Assignment of Error taken here.

If the full amount of value involved were apportioned to the property used in the intra-state freight and passenger business in the state, the effect upon the percentage of return under the rates in controversy would be infinitesimal. (See Table of Results 1 N. P. p. 264.) We insist however, that the record shows that these lands were properly included. They were examined by the State Engineer and after their nature and relation to the remaining lands was seen, they were included and appraised by him. Even if question should exist, it is foreclosed here by the failure of exception or Assignment of Error.

Charles Hayden, Assistant Right-Of-Way Commissioner of the Great Northern Railway Company, testified to over 20 years' experience with land and tax matters of that company and its predecessors, the St. Paul, Minneapolis and Manitoba Railway Company. Prior to entering its service he had had engineering experience with the Pennsylvania and Union Pacific Companies, and also with a line in Brazil, South America,—or in all, thirty-two years' experience of the kind indicated.

Since 1887 his work has kept him constantly in touch with the purchase of right of way, either personally or through agents. He testified to complete knowledge of the entire system, and the values of right-of-way, both in the country and in towns and cities through which the road runs. During his connection

with the properties, about 5,000 miles of road have been constructed, and about 100,000 acres of right-of-way obtained. (Vol. 2, G. N. Rec., page 164.) Of these the witness had direct connection with purchases involving expenditures of between eight and ten million dollars.

Mr. Hayden presented a schedule (Hayden Exhibit 9, Vol. 6, G. N.), entitled "Statement Showing Estimated Cost of Reproduction of Right-Of-Way, Station Grounds and Terminals, June 30, 1908." This covers the entire operating system by states; it also separately states values in the larger terminals and the right-of-way by sections in the State of Minnesota.

The witness proceeded to give testimony relating to the employment of expert real estate men in the three larger terminals, substantially similar to that already quoted from the evidence of Mr. Thomas Cooper. (Vol. 2, G. N., p. 168.)

After receiving their report, he added a percentage to cover "railroad value" as defined by Mr. Cooper, and as based upon instructions from Mr. Morgan in defining that term.

Questioned regarding the addition of certain percentages made by him to the figures returned by the committee in St. Paul, Minneapolis and Duluth, he said (Vol. 2, G. N., p. 328):

> "Q. I wish you would explain a little more fully what is embraced in this addition of 25 per cent which you say you made to prices in St. Paul and Minneapolis returned to you by the committee of real estate appraisers. You stated yesterday quite fully that one of the elements entering into that percentage was the matter of

improvements; will you state now fully just what the other elements, if there are any, include?

A. Well, one of the other elements was the matter of severance, where you take a portion of a lot and leave a part outside, and also the increased cost which a railroad has to pay sometimes in addition to what any other person would pay, that is, for any other purpose than a railroad purpose; and also the salaries and expenses of persons who would be employed to make these purchases and the office expense, whatever it might be, connected with the handling of the property. Those are some of the elements, and I think about all, that enter into that percentage."

* * * * * *

(p. 340)

"Q. Do you find actual conditions of severance damage and other elements of that kind which are to be taken into consideration in estimating the cost of reproducing a certain right of way?

A. Yes, sir.

Q. Now, then, Mr. Hayden, from the investigation that you have testified to and the consideration you have given to this subject, are there any changes which, if you were making this return to the company, you would make in your figures as shown in your exhibits 9 and 10?

A. I have gone over these estimates very carefully and have made what I consider is a conservative estimate of the cost of reproduction in my own mind; I doubt very much if I could reproduce the properties shown in that schedule 10 for the amounts given in the estimate; I would not feel justified in reducing that even for an estimate to our own board of directors, if I was asked to make an estimate of cost of right-of-way on those lines."

See also full discussion regarding severance damages in testimony of Thomas Cooper (Vol. 2, N. P., p. 242, et seq.); also Morgan (Vol. 5, N. P., p. 1804).

The acreage and values placed upon the Great Northern terminals in Minnesota described in this Exhibit 9, Hayden, as follows:

Minnesota	Acres.	Value Per Acre	Total Value.
St. Paul Terminals	357.12	$22,709.00	$8,041,686
Minneapolis Terminals	401.59	36,168.00	14,524.704
Duluth Terminals	27.19	35,644.00	969,152
Total Terminals in State	758.90	$29,947.24	$23,535,542

Note.

Appellants (Brief p. 176) now for the first time, complain of error below in the inclusion of area of street crossings and parts of streets used for right-of-way in the large terminals. Having fully investigated this subject in the lower court and found that the rights-of-way in question were permanent in character as stated by the Master (1 N. P. p. 224), and on account of which the railroad companies had paid large sums to property owners (Complainant's Exhibit 78, Cooper, 10 N. P.), the subject was abandoned as having no practical bearing upon the merits of these cases. No exception nor assignment of error was taken regarding the action of the Master in this regard.

In the Great Northern case, to illustrate the nature of the question, State Engineer Morgan (Defendant's Exhibit C-3 Morgan, 5 G. N.) showed that in the city of St. Paul but 3.23 acres were found within street lines, of a value claimed by the Complainants of $135,-113.47. His exhibit C-7 (following) shows a total area in St. Paul, owned by the Great Northern, of 350.89 acres. For the St. Paul terminals the Master allowed (without 5% addition) $6,433,348.00 (1 N. P. p. 221). Thus the street areas in St. Paul are less than 1% of total terminal areas and .021% of St. Paul terminal value.

The Master was unquestionably correct in his view of the value of these permanent grants, but when a full showing upon the subject had been made before him, it was incumbent upon appellants, in the exercise of good faith, to have pointed out their objections to him by proper exception, so that the error, if any, might have been corrected. The weight now sought to be given to so inconspicuous a matter, can only be explained as a belated effort to create doubt and an impression of material error, where none in fact nor in substance exists.

Complainant's Exhibit 10, Hayden (Vol. 6, G. N.) is an extended statement in detail of the land valuations of the Great Northern lines in Minnesota. Sheets 2 to 6, inclusive, show the valuation by separate areas in each of these great terminals as fixed by the committees of real estate appraisers, with the percentage added by Hayden to cover added elements of value as explained (supra). It demonstrates the care and particularity with which these appraisers carried out their work and shows that their valuations were

arrived at by close calculation of the values of each separate parcel of terminal land, whereby local data could be secured to test their judgment. They did not attempt to value these terminals as a whole or by indulging in general opinion evidence as to their value as completed terminals of great systems, but segregated them into rational districts and valued them in their relation to the local surroundings of each.

Alvin S. Cutler, civil engineer formerly in the employ of the Minneapolis & St. Louis Railroad (and instructor in the University of Minnesota at time of trial) produced Exhibits 28 and 29, Cutler (Vol. 6, M. & St. L.) covering the valuation of that system. Exhibit 29, Cutler, shows in detail the valuation of the Minneapolis terminals of this company, being the only large terminals owned by it in the state.

	Acres.	Value Per Acre.	Total Value.
Minneapolis.....	30.086	Various.	$5,709,362

These figures were based upon the appraisement of experts as stated by Cooper of the Northern Pacific with small percentages added to express total value as explained in Cutler's testimony (3 M. & St. L., p. 918, et seq.).

Evidence of Terminal Appraisers.

Complainant's Exhibit 23, Watson (Vol. 10, N. P.) is a schedule of values of the St. Paul terminals of the Northern Pacific Company as determined by districts, and price per square foot by the Appraisers Taylor, Watson and Read, dated October 1, 1906. It ranges from $8.00 per square foot for the most

valuable district contiguous to the business districts of the city and Union Depot, down to 4 cents per square foot in the outlying parts of the city.

Complainant's Exhibit 11, Taylor (Vol. 6, G. N.) is a similar schedule of the St. Paul terminals of the Great Northern Company, similarly divided and determined. It ranges from $8.00 per square foot to 10 cents per square foot.

Complainant's Exhibit 22, Elwood (Vol. 10, N. P.) is a similar schedule covering the values of the Northern Pacific terminals in Minneapolis and ranges from $3.00 to 5 cents per square foot.

Complainant's Exhibit 15, Elwood (Vol. 6, G. N.) is a similar schedule of the values fixed by the Appraisers upon the Great Northern terminals in Minneapolis, divided between the holdings of that company on the east and west sides of the city, the division being made by the Mississippi River. On the west side wherein the most valuable parts of the city lie the figures range from $5.00 to 5 cents per square foot. On the east side they range from $1.00 to 5 cents per square foot.

Alvin S. Cutler, witness in the Minneapolis & St. Louis case, testified (Vol. 3, M. & St. L., p. 915) to the district division and square foot valuations fixed by these appraisers in the case of the Minneapolis & St. Louis terminal in Minneapolis. This appraisement ranged from $5.00 to 7½ cents per square foot.

Complainant's Exhibit 21, Stryker (Vol. 10. N. P.) is the valuation of the Northern Pacific terminal property in Duluth as determined by the Duluth appraisers. This exhibit contains valuations per acre, parcel and per square foot.

Complainant's Exhibit 17, Stryker (Vol. 6, G N.) is a similar valuation upon the same bases of the Great Northern terminal properties in Duluth.

In order to show the quality of the appraisement of these witnesses, some quotation from their testimony in the record may be indulged:

St. Paul Terminals.

Oscar L. Taylor, age 50, testified that he had resided in St. Paul since 1882 and had been continuously engaged in the business of buying and selling real estate and making valuations of property for mortgage loans and other purposes; that as a part of his business it is a very essential element to keep familiar with values. He further testified that for fifteen years past he had had a large experience in buying and selling property for railroad purposes.

He testified (Vol. 2, G. N., p. 359):

"Q. To what extent has the necessity of valuation of properties entered into your business?

A. Well, it becomes a very essential feature for a successful real estate man to be thoroughly informed on the general values of property.

Q. And must his information be continuous, never lapse?

A. Yes, it is a thing that is shifting; the question of values often varies extremely from month to month; at other times the period of fluctuation will be more widely spread out; but in order to have a clear idea of the values of property you have got to keep in general touch—as close touch as possible—with the various sales and the various elements that go to make up the values of property.

Q. How extensive is and has been your knowledge of what may be called generally railroad properties in and about St. Paul?

A. I have had quite a lot of experience in handling properties of a railroad character; I have been employed in the capacity of agent by a number of the different railroads, and extending over quite a wide period of time; have been in more or less constant touch with the railroad development and the prices paid by the railroads for different pieces of property.

Q. Have you ever been personally interested in purchasing properties for railway use on your own account?

A. Yes, I have.

Q. And have you ever purchased any such properties on account of railroads?

A. Yes.

Q. One or more?

A. Yes, various.

Q. Have you ever acted for sellers to railroad companies?

A. Yes.

Q. And in how recent years have you had such experiences?

A. Well, by experience you mean the general line which we have just discussed?

Q. Yes, either buying for or selling on account of railroad uses.

A. Right up to the present time; that is, comparatively present, within a month or two."

Testifying regarding the circumstances under which he and others made appraisal of the railroad land in St. Paul, he said:

(p. 361)

"Q. Will you state briefly, what the transaction of your employment was, how it came about, and what your instructions were?

A. Along in the fall of 1906 I received a tele-

phone message from Mr. Thomas Cooper, the land commissioner of the Northern Pacific, asking me to come down to his office, which I did, and he told me that their railroad, and likewise the various other railroads of St Paul, wished to have an appraisal made of their properties in the city. He asked me what course I thought was the simplest way to ascertain the probable value and what suggestions I could make to him along that line. I told him I thought a committee of perhaps three could take the matter up and go carefully over the whole subject and arrive at a fair idea of the value of the property. I suggested to him the names of Mr. W. C. Read and Mr. J. J. Watson, both of whom I knew had had more or less experience in similar lines; and those names being agreeable to Mr. Cooper, I think the next day or very shortly afterward these three men, Mr. Read, Mr. Watson and myself, were asked to meet at Mr. Cooper's office, where we found assembled representatives from the various railroads."

* * * * * *

(p. 362)

"We had a meeting of perhaps an hour's duration, in which the general subject was discussed as to how we might arrive at a valuation, by what method, whether to divide the various properties up into small or large districts, and a general discussion of how we had better go to work. Finally, having the matter left in our hands to decide as to just what arbitrary divisions of property might be made—

Q. For the purpose of valuation?

A. For the purpose of valuation—it was suggested by several of the men that they wanted a fair and equitable valuation of the real estate of the various roads. We were instructed to leave out the question of railroad improvements or what money had been expended by the railroads

above the cost of the land, but to simply take the value of the terminal properties and the various rights of way wherever they existed, and to value them on reasonable and equitable lines."

* * * * * *

(2, G. N. p. 363.)

"Q. How soon did you enter upon that work after this conference in the fall of 1906?

A. Very shortly.

Q. What was the method of it, what method did you pursue?

A. Each of the railroads interested, after having given these general instructions, provided us with a set of plats showing their various properties. It happened at that time that I had a vacant floor in the top of the building in which my office was situated, and we used that room as a committee-room, had a large table there, and we laid out these various plats. And the first two or three sessions were devoted to a general discussion of the situation, having a desire to as far as possible associate pieces of property belonging to the different railroads into a class of similar value, and before attempting to make any figures we tried to separate certain portions of the Great Northern and Northern Pacific and the Omaha and segregate them into sections showing a close similarity in general valuation. Having arrived in a general way, as to what proportion existed between the various terminal pieces of property owned by the different roads—

Q. You mean what relation with regard to value?

A. Yes. We thereupon began—I have forgotten now what road we took up first, but we took them one after another, and divided them up into sections, a purely arbitrary division; sometimes, owing to particular surroundings one section might be quite small; another, where the property extending over a much wider area

presented practically the same features, that section or subdivision would be much larger; and so on until each railroad was divided up into a different set of sections. We thereupon took up the question of figures for these different subdivisions, and occasionally we would find properties on the Northern Pacific where we had made a certain valuation for a certain section and had made a certain valuation for a certain section of the Omaha where there was a discrepancy—a difference, rather, in valuation—and yet when we came to compare those a little more closely (these two particular sections) the feeling existed that they were entitled to perhaps a uniform valuation, and we would readjust the one or the other; and so on through the general discussion of the entire problem until we had finished up everything, including the Minnesota Transfer, that was brought before us.

Q. Your conclusions were not arrived at, I take it, without discussion as between yourselves, as to what was a proper valuation to put upon these respective properties?

A. No. constant discussion. As I stated, before we made any figures at all. there was a general discussion for a long time on the general question of railroad values and what proportion existed between one and the other, and when it came to taking the Great Northern sections 1, 2 and 3 and along that, each one of the committee would express his particular opinion; and sometimes on a section the opinion of each member of the committee would be different, and we would arrive at a uniform opinion in a way that any commission might.

Q. Did you exchange experiences and bits of information which you might have with regard to questions bearing upon the valuation?

A. Yes, we attempted in every sort of way to a most complete interchange of individual knowledge, what each one of us had gained during the years of experience of that sort."

* * * * * *

Q. Your method of stating your valuation was certain tracts so much per square foot, certain other tracts so much per square foot, without reference in your report to the size of the tract; that is a fact, is it not?

A. We based everything by the square foot.

Q. Leaving it to the railway companies themselves to make the calculations, merely mathematical calculations for the purpose of stating the value of the respective tracts?

A. Yes, and the acreage in the various tracts."

* * * * * *

Testifying further, the witness said (Vol. 2, G. N., p. 366):

"Q. You have been under cross-examination as a witness in the Northern Pacific case, and perhaps I am right in stating that you have some general information with regard to the testimony that has been given for the defendants in that case other than the railway company, on the question of valuation of real estate, and perhaps you have given considerable consideration or much consideration to this question since you testified in the Northern Pacific case; now, if I state the facts right, I ask you whether or not in your opinion you and your associates have stated the values of the Great Northern properties higher than you think you would be justified in stating them if you were called upon today to state them.

A. I do not think that either myself or the other members of the committee would be inclined to lower the values in the slightest degree."

These appraisements were made in 1906.

Taylor testified in the Great Northern case on March 26, 1909. He was asked (Vol. 2, G. N. 373) regarding a recent sale in St. Paul of lands for railroad pur-

poses, confirming certain of the St. Paul values fixed by the St. Paul Commission.

"Q. Well, do you know any recent transaction which, in your judgment, justifies any valuation which you have made as shown upon your Ex. 11?

A. Why, only recently, within a very few days, the Soo purchased a corner down on East Seventh street, near the bridge, at a price that would warrant the highest valuations that we have put anywhere.

Q. What property have you in this Great Northern property nearest that property bought by the Soo?

A. That nearest to it would be along the Seventh street bridge.

Q. And how near is that to the property bought for the Soo?

A. Two blocks and a half; each of those blocks being 200 feet.

Q. About 500 feet, then, outside of the streets?

A. Something like that, yes.

Q. What valuation did you put upon the Great Northern property nearest that?

A. $2.50, I think, a square foot, from Sixth street to Grove was $2.50. That is Grove and Seventh here, meeting at the Seventh street bridge; from Grove to Lafayette avenue, $1, that being almost equally near the property recently acquired by the Soo—within 600 feet of it.

Q. The property recently acquired by the Soo is on Seventh street, which at its junction with Grove you have made the division point between your $2.50 a square foot valuation, and $1 valuation.

A. Yes.

Q. There is a building upon that property purchased by the Soo?

A. Yes.

Q. Have you any opinion or any information as to what that building is considered worth?

A. The property, as I understand, sold for about $52,000; the lot, according to my recollection of the plat there (I haven't refreshed my memory) should be 50 by 100, or 5,000 square feet. The building is an old one, has been there for many years; I should not estimate it to be worth to exceed $10,000.

Q. That would leave something over $8 a square foot for the land without the building?

A. Yes, about that.

Q. That was bought probably openly for railway uses?

A. Yes, I think so.

Q. It had to be?

A. Yes.

Q. Under the circumstances of the Soo's acquisition of property?

A. Yes. Now, that is the same price that we set the highest priced property, and no man with any experience at all but what would say that the property around the present union depot was very much more valuable than that lower Seventh street property.

Q. You set no property higher than $8 a square foot?

A. No."

John J. Watson, another of the committee that appraised the St. Paul terminals, testified to substantially the same effect as the witness Taylor. His experience and the value of his judgment is shown in the following examination (Vol. 2, G. N., page 617):

"Q. How much, roughly, of property used or destined for use, according to present plans, in the city of St. Paul, have you been connected with, either on one side or the other, so far as the transaction of its purchase or condemnation goes?

A. Well, a very considerable part of the holdings of the Northern Pacific Railway Company,

especially in the Trout Brook Valley, were purchased for that corporation by the firm of which I was a member, nearly thirty years ago (between twenty-five and thirty years ago) and in the last six years I have acquired all of the property known as the Soo right-of-way and terminals in St. Paul."

In the Northern Pacific case (2 N. P., p. 507) he testified that he had had thirty years' experience in dealing in real estate in St. Paul. Asked upon cross-examination to state instances during his experience of representative prices paid for St. Paul city property, he testified (page 523):

"A. More than twenty years ago, I sold to the Wisconsin Central Railway Company, as broker (I was not employed by the Company, but made the sale to them), lots on East Third Street at about an average of $3 a square foot.

Q. What did you value them at in this appraisement?

A. $4.25.

Q. How near is that particular property you have just spoken of to Third and Sibley?

A. Well, those properties were between Pine and Willius streets on Third It is several blocks, from eight to ten blocks below Sibley street."

And again (page 525):

"A. Well, now, another instance was the sale of the corner of Fourth and Broadway to the Northern Pacific road, over twenty years ago, at five dollars a square foot.

Q. What did you place it at in this valuation?

A. $8.

Q. That was the one occupied by the—

A. It is now occupied by their general offices.

Q. That was because there had been a general advance in the price of business property in that neighborhood?

A. Yes, and—

Q. Had there been any considerable—

Witness: And what we considered an appreciation in value of property. We didn't place the value upon the Northern Pacific property because they paid $5 a foot for it. I merely instanced that to show that I was familiar with what that property was worth twenty years before. Of course, property in a growing city is worth more in a city when it has a population of 200,000 people than when it only had 50,000.

Q. That, of course, you take into consideration?

A. Certainly."

William C. Read, third of the St. Paul committee testified to twenty-three years' experience in all kinds of St. Paul real estate. He also supported the figures shown in Complainant's Exhibit 23, Watson (the St. Paul appraisal) by specific transactions within his knowledge (this exhibit is the same as Complainant's Exhibit 30, Cooper, 10 N. P.):

(4 N. P., p. 1119.)

"Q. Ex. No. 30 shows your valuation of the property owned by the Northern Pacific between Broadway and Pine streets at $8 per square foot. Where is that property located?

A. That is the property where the general offices of the Northern Pacific building stand, facing on Broadway and Fourth and Prince streets.

Q. It abuts in the rear upon trackage property?

A. Yes.

Q. Owned by the Northern Pacific?

A. It connects with it.

Q. What, if anything, in the way of transactions, either by sale, lease or condemnation proceedings, did you have in mind to assist you in making that valuation of $8 per square foot?

A. There was a lease with which we were familiar, made by the Northern Pacific to Nelson Morris & Company, on a lot on Broadway, I think lot 4, block 44.

Q. And how does that lie as compared with this property?

A. Well, that is on Broadway and it is upon the property.

Q. How near to this property?

A. There is just one block between. They made a lease on that lot, back in 1900, I think, based on a valuation of $25,000 at six per cent interest; the lease runs fifty years and has a revaluation clause in it after the first ten years for every succeeding five years. If that was capitalized on a basis of four per cent (and a fifty-year bond would easily sell for that) it would make the valuation of that lot $37,500, or nearly $8 a square foot. We didn't consider, though, any transaction of that kind as controlling. The condemnation for the opening and widening of Sibley street had been concluded only a month or two before we were called into this work. That would apply in a certain way. There was a lot 50x177 feet, containing about 8,850 square feet, that was condemned by the city for the opening and widening of Sibley street, and $79,000 for the land alone was paid for that property.

* * * * * *

(4 N. P., p. 1121.)

Q. What would that amount to a square foot?

A. That amounted to practically $9 per square foot for the land. That we didn't allow to influence us except as far as we might apply it. It was rather a notorious case and well known.

Q. Did you know of any other transaction in that neighborhood that you took into consideration?

A. Well, none especially that would apply to that one division. A sale that was very well known among real estate men farther down was one made by the Kenny Brothers, John and Terrence Kenny, to the gas company. That was made in 1905. That sale was lots 6, 7, and 8, block 46, Kittson s addition.

Q. And this is located how near this property?

A. That is very close to the next division, across the street.

Q. That is, from your No. 2 on Ex. 30, being the property between Pine street and Willius street?

A. Yes, sir.

Q. Very close to that?

A. Very close to it, yes; just across the street.

Q. What was that property sold for?

A. $50,000 for the three lots.

Q. Comprehending how many square feet?

A. About 15,000 square feet. Those lots have not trackage, no access to tracks, and never can have until the gas company plant is moved. I say we knew of that sale and just simply applied it as far as we thought it would go, or be applicable.

(Note—In District No. 2, Ex. 23, Watson (Vol. 10, N. P.), the railroad property was appraised at $4 per square foot. The transaction above referred to by the witness, in 1905, for property having no railroad use, shows a price of $3.33 per foot.)

Q. Are there any other transactions?

A. Well, down in block 52 there was one transaction that was well advertised, what we call the Abbott lot.

Q. And that is near which district of your valuations?

A. That is near the third division.

Q. From Willius street—

A. From Willius to Brook.

Q. —to the Sixth street viaduct?

A. Yes, sir; the Abbotts owned a lot there 50x 111 feet, with a factory building on it, a planing mill. That was condemned, I think in 1903 or 1904, and we remember that because it was given a good deal of prominence at the time. The award in that case was $20,833.33. The Abbotts were allowed to remove the buildings without any expense. That would be about $3.75 a square foot. We appraised the property in that vicinity at $2.50. We didn't consider that price as fixing a price for the whole district, by any means."

In the Great Northern case, Mr. Read testified (Vol. 2, G. N., page 606):

"Q. You have testified in the Northern Pacific case and you have discussed the matter at length both with me and with others, have you not?

A. I have.

Q. What is your present judgment upon the question of the reasonableness of that valuation, if made today?

A. If made today I should be inclined to increase the prices. You mean as of 1909?

A. Yes.

Q. At the time we made it, in 1906, we thought we were fixing a fair and reasonable figure upon it. Since then there has been a hardening of prices, especially through the central business part of the town and that section around the terminals, and values have increased considerably.

Q. Can you give an instance of any transaction since you made that appraisal, or which have come to your knowledge since, which in your opinion

justify the appraisal, or any part of it, that you didn't know at the time?

A. There was one rather striking example which came to my notice the other day in the sale of a lot in Kittson's Addition to the Soo road; it was Lot 8, Block 23, Kittson's Addition. That lot was sold to the Soo for $52,500, with a three-story double brick building on it, which could probably be estimated at $10,000 to $12,500, but allowing $12,500 for the building, you would still have $40,000 left or $8 per square foot. I sold that property to the owner, who disposed of it to the Soo, for $11,000 in 1901.

Q. What property of the Great Northern would you compare that valuation with?

A. The property just below Seventh street from Sixth to Grove street.

Q. At what figure did you and your associates appraise that?

A. $2.50 a square foot.

Q. What is the situation of that property of which you have been speaking, how does it lie as compared with the railway properties?

A. It is considerably higher; above grade.

Q. It is contiguous to other property?

A. Oh, it is contiguous, yes; I suppose it is about two and one-half blocks from the Great Northern tracks.

Q. And do you understand it has been bought for railway uses?

A. Yes, sir.

Q. And is available for that?

A. Yes, sir.

Q. Or will be when cut down?

A. The Abbott case is a better example. That was Lot 4, I think, Block 52, Kittson's Addition. That was condemned by the Northern Pacific road, and they paid $20,833.33 for that property exclusive of the buildings. That was about $3.75 a square foot. That is nearer and more nearly like the property from Sixth street to Grove,

which we appraised at $2.50 per square foot. Those single instances, however, in my estimation, do not settle the matter at all, they are simply a help and a guide, and we could only apply them in a general way as far as they would help us."

Charles Hayden, Assistant Land Commissioner of the Great Northern, further testified (2 G. N., p. 273) to actual prices paid by that company for certain lots in St. Paul adjoining the Union Depot. It is in this district that the highest values were found by the appraisers, i. e., $8.00 per square foot whereas the Railway Company paid $9.73 per square foot. The witness testified:

"Q. What property is that that you have referred to?

A. That is the property from Sibley street to Wacouta, on the south side of Third street, the Kelly building, and the buildings from there to Wacouta.

Q. When did you buy that property?

A. It was purchased at various times from 1903, I think, or 1904, up to within one or two years ago.

Q. It is included in this appraisement, is it not?

A. Yes, Sir.

Q. Is it put in at what it cost you?

A. It is put in at $8 a square foot by the real estate men, and 25 per cent added makes it cost to reproduce $10 per square foot.

Q. What did it cost?

A. It actually cost us $9.73 per square foot.

Q. All of that property?

A. Yes, sir.

Q. Did the appraisers return that property at less than you paid for it?

A. They returned it as real estate without improvements at $8 a square foot."

Note.

Appellants indulge in further error regarding the record in their efforts to create an impression of over-valuation. They refer (Brief p. 189-192, subtitle "Other Evidence of Over-Valuation") to Defendant's Exhibit C-8 Morgan (5 G. N.) and assert that that exhibit shows a contrast between *prices paid* for railroad lands in St. Paul and Minneapolis and *cost of reproduction values claimed* in the inventories reported to the state and used in these cases.

Appellants are wholly incorrect in their statements in this regard.

In the Northern Pacific case, State Engineer Morgan was directly asked to point out what parcels of land in Exhibit C-8 were included by Mr. Cooper in his exhibits. He testified that the St. Anthony Park and Commercial Streets properties were *not* included in Cooper's appraisement (8 N. P., p. 4194) and that the so-called "Railway Cost of Reproduction" shown on the exhibit was not such at all, but merely the amount that Morgan "considered *might have been the judgment* of the real estate experts who appraised the property for the Northern Pacific." (8 N. P. p. 4196). He used figures put on adjoining property without regard to the question as to whether the property was of the same kind, equally available or equally valuable for railway purposes.

Defendant's Exhibit 3-R Morgan (9 N. P.) includes the same Northern Pacific property shown in Exhibit C-8 (supra). The sum of all the payments

aggregating $322,700.00 and the three following, aggregating $29,500.00 equals $352,200.00, which is the amount shown in gross opposite the description "Commercial Street Property" on Exhibit C-8. The same is true of the St. Anthony Park property. The two items $27,085.61 and $26,000.00, together equal $53,-085.61, shown in gross in Exhibit C-8.

So it appears as to these two items of Northern Pacific property in St. Paul, they were not valued at all by the real estate committee nor the Railroad Company and appellants are wrong equally with the misleading title to Exhibit C-8.

Morgan, however, pointed out the Kittson Addition property on Exhibit C-8 as included in the valuation returned by the Company. The exhibit shows that it cost the Railway Company $451,000.00 and was appraised at $915,638.17 but it fails to show when the purchase was made: (See Morgan, 8 N. P., p. 4194-5.)

Much earlier in the case, however, (5 N. P., p. 1870-1) Morgan showed that this property had been bought by the Northern Pacific in 1890 and title taken in the name of individuals (p. 1872), and later transferred to the Northwestern Improvement Company. In other words, the cost of $451,000.00 was cost in 1890, 18 years prior to these appraisements. So, the true state of the record is that valuable terminal property in a growing western city appears in 18 years to have doubled in value! There is no evidence of over-valuation in a result of that kind.

Rock Island Purchases.

Appellants return to Exhibit C-8 for a particular illustration of over-valuation, i. e. purchases by an-

other Company, the Chicago, Rock Island & Pacific R. R. Co. in 1901-2 in West St. Paul. The sole purpose of this reference is an effort to cast discredit upon the judgment of the real estate committee in St. Paul. These lands were purchased for $137,298.55 in 1901-2 and appraised to the state in 1907 at $987,-262.69. The witness Taylor (2 G. N. p. 402) was particularly interrogated regarding these lands and showed clearly that they were purchased at a time of great depression, from the receiver of the defunct bank, who was being pushed by creditors to realize upon assets. For these reasons, the purchase price in 1901-2 was held by the Committee to have little bearing upon value under conditions existing in 1907.

Minneapolis Terminals.

Lester B. Elwood, Fred E. Barney and J. Arthur Ridgeway comprised the committee selected to appraise the terminal lands in Minneapolis.

Mr. Elwood testified (Vol. 2, N. P., page 480, and Vol. 2, G. N., p. 554) to thirty-three years of experience in the real estate business there, during which time for many years he was chairman of the valuation committee of the Minneapolis Real Estate Board. For six years prior to giving his evidence he had furnished values to the city assessor of all the business property of Minneapolis; he had also dealt with values there as a member of the State Board of Equalization. Finally he testified that he had had particular experience in dealing in "trackage properties," i. e., properties adjoining railroads and suitable for railway purposes.

Mr. Barney testified (Vol. 3, N. P., page 1092) to over 20 years' similar experience in Minneapolis. For four years he had been a member of the valuation committee of the real estate board and had been employed by the University of Minnesota to acquire lands for university purposes and served on condemnation boards of appraisers; chairman of Board of County Commissioners and president of a bank.

It appeared that Mr. Ridgeway had had about 20 years' experience in land matters, becoming finally secretary of the Minneapolis Park Board, largely on account of his knowledge of real estate values (N. P., page 482).

Complainant's Exhibits 22—Elwood (Vol. 10, N. P.) and 15—Elwood (Vol. 6, G. N.) show the re-

sults of the appraisement in Minneapolis of the terminals of the two companies under consideration.

The testimony regarding these exhibits and the basis upon which they were prepared was substantially the same as that given by members of the St. Paul committee and need not be quoted here. Mr. Elwood testified, however, to certain actual transactions of recent occurrence that show beyond controversy the conservative nature of the appraisal by this committee. He testified (Vol. 2, G. N., page 563):

> "Aside from the property which is known as the Union Station property and which we appraised at $5 per square foot, the next highest property or the next highest appraisal of the Great Northern road is the property from First street north to Seventh street north along or about along the line of Fourth avenue north, as shown on the plats. That property was appraised at $3.50 per square foot. On or about this time—in fact, prior to this time, but the information which I now have I did not at that time have—Mr. T. B. Walker, of Minneapolis, made a lease to Butler Brothers of a tract of land; the terms of the lease although expressed in a rental charge of so much per square foot of the building which was erected by Mr. Walker, was based by him on the then value of the land and the estimated cost of the building. This land was situate on Sixth street between Second avenue north and First avenue north, a tract of land 330 feet long by 170 feet wide; at the time it was improved with some old buildings and the remnants of the old baseball park—no buildings on it of any value. This land is, in my opinion, of about the same value as the average of the tract that I name occupied by the Great Northern terminals of right-of-way and situate about

two blocks from it. On the basis of $200,000, upon which the lease was made, it would figure at the rate of $3.62 a square foot.

Q. And what does your appraisal show for this property of the Great Northern?

A. $3.50."

* * * * * *

"About this time Mr. Walter Heffelfinger sold to Mr. Bovey, who built a wholesale grocery house thereon for his son-in-law, a tract of land seventy feet on Second avenue by seventy-seven feet on Fifth avenue. This tract in its entirety is nearer the Great Northern tract than the first named, the Butlers'. This property was unoccupied except with an old building, which was given to a wrecker to remove. There are 5,390 square feet in this property, and the price paid was $3.80 a square foot."

* * * * * *

"I am interested in a small way, first I negotiated a mortgage loan and, second, I have a small interest in the property, in a piece of property on First avenue north and Washington known as the old Windsor Hotel property.

Q. How far is that from any Great Northern property which you appraised?

A. In one direction it is two blocks and a half, and in another direction a little less than three blocks. This property is 66x157; a lease of same for twenty-five years has been closed and signed, and the buildings are now being wrecked on the lot in question, the lease providing for a rental of five per cent on a valuation of $84,000, which would be at the rate of $11 per square foot.

Q. And what is the valuation of the nearest Great Northern property?

A. I think the nearest Great Northern property would be the Fourth avenue north, which

would be $3.50, although it is about equidistant from the so-called union station property, appraised at $5 per square foot, but there had been property sold nearer the union station than this.

The City of Minneapolis has acquired the tract of land bounded by Nicollet and Hennepin, Second street and Washington, the nearest part of which is two blocks from the union station, for a park called the Gateway Park; this property was appraised by commissioners appointed by the Court, the law requiring that these commissioners should live outside of the ward in which the property was located, and it was so appraised at $472,000.

* * * * * *

There are in this tract 36,300 square feet. Deducting the valuation on the buildings made by Mr. McMillan of $98,000, which buildings will be absolutely valueless to the park board (they cannot be wrecked and anything of any considerable amount obtained from them as wreckage) would leave the amount paid by the park board for the land alone $11 per square foot.

Q. As compared with $5 per square foot which you and your associates placed upon the nearest Great Northern property?

A. Yes, sir. The Postoffice Department (or rather the United States government) acquired block 40 by purchase, not by condemnation.

* * * * * *

This is also about two blocks or two and a half from the Great Northern porperty right-of-way, possibly three blocks or four blocks from the union station.

* * * * * *

On the basis of $350,000, bought, as I stated before, in open competition, would figure up $3.42 a square foot. There are 102,300 square feet. The correction of my computation can be

gone into later. There are other small sales that bear these figures out.

Q. Well, let me ask what property of the Great Northern that you appraised is nearest this property which you have last described?

* * * * * *

The nearest property as this lies between Second and Third avenue, is the property lying between Second avenue south and Sixth avenue south.

Q. And what did you appraise that at?

A. $2.50 per square foot.

Q. How do these prices and these values shown by these transactions which you have specifically named and described compare with prices for contiguous property and values of contiguous property which you had in mind at the time you made this report? Are they higher or lower than values were generally supposed to be at that time in that vicinity?

A. They are higher, as I think I stated that the consideration and the investigation which I have made since these reports were turned in, convince me that our valuation if they erred, erred on the side of being too low, and had I been or had our committee been as well informed at that time as two years of consideration and investigation have made us informed at this time, our valuations would have been somewhat higher, irrespective of the increase in values since the time the appraisals were made."

The witness Elwood further testified at length (2, G. N., 568) to pending purchases of $375,000 worth of property for a new line for passenger business into Minneapolis for the Northern Pacific. A portion of the purchases had been completed and the remainder were still in negotiation under open offers. The average price per square foot in these purchases and offers

was 55 cents as compared with adjoining railroad right-of-way lands appraised at 30 cents and 25 cents per square foot.

Duluth Terminals.

J. D. Stryker, E. C. Little and Luther Mendenhall, of Duluth, appraised the terminals there. They appear to have had similarly wide experience in dealing with real estate values in that city, and their testimony is of similar import to that of previous witnesses. The restricted area available in Duluth for terminals is shown in the following evidence by the witness Stryker (Vol. 1., N. P., page 456.):

> "Will you state, having particular reference to its topographical conditions, the character of Duluth, and with especial regard to its facilities for railway terminals and railway transportation?
>
> A. Why, the topography of Duluth is such that it seems to have fixed the business center of Duluth, the water on one side with the harbor, and then rising right from the water is a steep hill some 500 feet high, so that the business center is necessarily along that water front, and the railroads necessarily,—I suppose that it is necessary that they should come in at the foot of the hill.
>
> * * * * * *
>
> Q. From your experience, and to the best of your judgment, is the amount of property which may be devoted to railway purposes on the water level unlimited or restricted?
>
> A. It is restricted, limited.
>
> Q. And to what extent? Very much so, or—
>
> A. Yes, very limited; in fact, it is practically all taken up, at the present time, below the business streets. Whatever is done now will have to be to condemn through business property."

This witness also testified to numerous actual transactions in contiguous property (1, G. N. pp. 462-467) at and since the time the Duluth appraisement was made, showing materially higher prices paid in ordinary course of business.

In the Great Northern case (1, G. N., p. 597), he referred to the following transactions:

"Q. Have you known of any transactions in Duluth in property in the neighborhood of this property covered by your valuation which in your opinion justify you in that view?

A. Yes, sir.

Q. Well, can you state one or two of them briefly?

A. Why, this property on Rice's Point particularly, there is a piece just sold here within the last two or three months.

Q. Where?

A. On the east side of Rice's Point.

* * * * * *

They sold six lots here, which would be 600 feet east of the right of way, out to the dock-line, for $100,000. That would be about 600 by 1000, I figured it out, it would be about $3,600 an acre, and it would be all out in the water except this strip here; there is very little of it that is on land. All of this property is filled, you know.

Q. How does that compare with the valuation which you put upon the abutting railroad property?

A. Our value was $3,000 per acre for all of this."

* * * * * *

"On Superior street, the Wisconsin Central have acquired all the property between Superior and Michigan street from Sixth avenue west to between Eight and Ninth avenues. They paid for some of that property as high as a thousand dollars a front foot, for inside lots; and this prop-

erty which we have valued for the Great Northern between Sixth and Seventh avenues we placed at $350 a front foot. That would be on the south side of Michigan street.

Q. How far apart are the Wisconsin Central and the Great Northern?

A. Just across the street; on the lower side of Michigan, this property that we were appraising that was taken by the Wisconsin Central, and this property we appraised is right across Michigan street from there. We put a value between Sixth and Seventh avenues of $350 a foot; between Seventh and Eight $250; between Eight and Ninth of $200 a front foot, and between Ninth and and Eleventh of $150 a front foot. Now these sales to the Wisconsin Central were made at prices that would indicate that this property was worth more than the values we put on it.

Q. Considerably more?

A. Well, it would be considerably more near Sixth avenue. Now, property on Superior street has recently sold, one lot between Fifth and Sixth avenues, just near Sixth avenue, for nearly $400 a front foot. We have a customer that would pay $1,400 a front foot between Fifth and Sixth on the lower side of Superior, running through to Michigan.

Q. How do these prices compare with the valuations that you placed upon the nearest property?

A. Well, they are much higher now than they were then; that is, all of Duluth central property, while there have not been many sales, they have all been made at higher prices. They are going up every day, and property is becoming more scarce, and it is almost impossible now to get inside property there. And then the property here on the bay front, these prices have appreciated right along; property that we sold for $50 a front foot on Thirteenth avenue west is held now at $100 a foot, and is not considered out of the way

at that. The Soo also paid from six to seven thousand dollars for fifty feet, that is, at that rate, on Ninth and Tenth avenues."

Complainant's Exhibit 21—Stryker (Vol 10, G. N.), and 17—Stryker (Vol. 6, G. N.), show the Northern Pacific and Great Northern appraisals, respectively, in Duluth.

Hayden, Assistant Land Commissioner of the Great Northern testified (Vol. 2, G. N., p. 324) regarding recent prices paid in Duluth:

"Q. You spoke about values on Rice's Point at Duluth, and some recent changes of property that you have had notice of; how recent were those changes?

A. Within the last two months.

Q. And on what basis of price?

A. The price was 30 cents per square foot."

* * * * * *

Q. What does that work out per acre?

A. In round figures about $13,000 an acre.

Q. Has the Great Northern Company made purchases up there since 1889?

A. Yes, sir.

Q. And on what basis per acre were those purchases made, if you recall?

* * * * * *

A. The Duluth Land & Warehouse Company were the owners, and it is my recollection, off hand, that we paid there from nine to eleven thousand dollars per acre (that is what the transfer amounted to).

Q. When you say some time ago, what do you mean by that?

A. Several years ago.

* * * * * *

Q. Do you know how the figures indicated from those purchases, and from these recent

changes within the last two months compare with the valuations placed upon the Rice's Point property in your figures?

A. In my estimate I have figured the value of the right of way on Rice's Point at $9,000 an acre, for the property on the Point itself."

* * * * * *

After considering the evidence regarding Duluth values the lower Court said: (Vol. 1, N. P., p. 421):

"The measure of the value of real estate is its market value for its most available use. There was uncontradicted evidence that the most available use of the terminal lands in Duluth, the use for which they were of the greatest value, was their use for railroad purposes, that they were indispensable for those purposes, that the real estate dealers who testified to their values had fixed them originally in 1906, without regard to their value for railroad uses, and that since that time they had advanced in value from 15 to 25 per cent. Thus the proof is ample to sustain the addition to this 1906 estimate of the value of these lands of 25 per cent. thereof for railroad value, cost of acquisition, and consequential damages which the Master allowed."

* * * * * *

Lands Outside Terminals.

On this subject the lower Court said (Vol. 1, N. P., 420):

"As to the lands outside of the terminals, the Northern Pacific Company produced the testimony of Mr. Cooper and proof of purchases and sales for railway purposes which tend to prove that his testimony of the cost of reproduction

and the value of the property was not substantially above prices that had actually been paid for like property. He testified that he had much knowledge from his experience and observation of the cost and value of these lands outside the terminals, that he verified his knowledge by investigating the purchases and sales of property in the vicinities of these various rights of way, that the necessary cost of obtaining such rights of way by a railroad company was three times as much as the normal value of the land, and that his testimony of the value of these tracts was based upon that fact. The evidence in the other two cases was of the same character."

The valuations by the parties of the outside lands and those determined by the Master are as follows:

Northern Pacific Case.

Railway estimate, complainant's Exhibit 9, Cooper, (10, N. P.)	$4,944,924.60
Defendant's estimate, Exhibit "QQ" Morgan, Table VII, (9 N. P.)	2,835,076.24
Difference between railway and defendants	$2,109,848.36
As reduced by Master i. e., 75 per cent of railway estimate (Vol. 1, N. P. 220)	$3,708,693.45

Great Northern Case.

Railway estimate, complainant's Exhibit 9, Hayden, (6 G. N.)	$7,100,379.00
Defendant's estimate, Exhibits "C", "C"-2, and "C"-9, Morgan (Vol. 5, G. N.)	4,936,752.45
Difference between railway and defendants	$2,163,626.55
As reduced by Master i. e., 75 per cent of railway estimate (Vol. 1, N. P. 221)	$5,325,284.25

Minneapolis & St. Louis Case.

Railway estimate complainant's Exhibit 28, Cutler, (Vol. 6, M. & St. L.)	$1,215,285.00

Defendant's estimate agreed with railway's (See Morgan's testimony, Vol. 4, M. & St. L., p. 1059); same amount allowed by Master (Vol. 1, N. P. 221).

From the foregoing figures it is apparent that the differences between the estimates furnished by the railways to the complainants and those made by Engineer Morgan are relatively small and unimportant in their relation to the total valuation of these properties in the state, but, nevertheless, in order that this Court may have an accurate view of the nature of the proof in the record some references thereto are important.

Review of Complainants' Evidence on Valuation of Lands Outside of Terminals.

Northern Pacific Case.

Complainant's Exhibit 9, Cooper, p. 1 (10 N. P.) shows that excluding St. Paul, Minneapolis and Duluth

terminals the Northern Pacific right-of-way lands in Minnesota comprise 19,896.91 acres of right of way and station grounds valued in said exhibit at an average of $248.53 per acre. The exhibit shows similar average figures for each of the states through which the system passes, and an average value per acre for the right of way and stations, outside of the great terminals, of $208.74.

Thomas Cooper, Land Commissioner of the Northern Pacific testified (Vol. 2, N. P., p. 126) that the values of right-of-way lands, outside of terminals, shown in Exhibit 9 were the result of two years, constant investigation for the purpose of preparing the report called for by the State, of the values of property in Minnesota and for testimony given in reference to the values of the system in the so-called Spokane-rate-case before the Interstate Commerce Commission; that personally and by means of experienced men employed for the purpose he had collected a large amount of expert opinion of persons having knowledge of land values in their respective localities, both in the State and throughout the system. He then checked these reports and his own judgment against the prices which he, as Land Commissioner for the Company, had paid and was currently paying for representative parcels of right-of-way and station grounds in the various states, and also against information derived from the system on the Northern Pacific of leasing excess right-of-way and terminal lands embraced within limits of its land grant, which system is based upon a charge of a rental of six per cent upon the value of the property.

In view of the long experience of this witness, the

facts as shown, supra, in complainant's Exhibit 8, Cooper, that between December 4, 1904, and May 31, 1908, he had actually expended $6,139,542.35 in acquiring right of way and terminal lands in all of the states through which the system runs, justified the approving comment in the opinion below upon the character of this witness and the value of his testimony. An examination of his evidence in the Northern Pacific record justified the following statement by the Court.

> "As to lands outside of the terminals, the Northern Pacific Company produced the testimony of Mr. Cooper, and proof of purchases and sales for railway purposes which tend to prove that his testimony of the cost of reproduction and the value of the property was not substantially above prices that had actually been paid for like property."

Exhibit 10—Cooper (Vol. 10, N. P.) was prepared by the witness in order to test the correctness of his judgment. It is a record of all of the purchases by the Northern Pacific from 1905 to 1908, inclusive, taken from its books. It shows an actual average cost per acre of $268.12 per acre in Minnesota as against an average value placed by the witness on the Minnesota right-of-way of $248.53. For the system it shows an average cost of $295.34 as against his average value of $208.74.

Concerning this exhibit, the witness testified (Vol. 2, N. P., p. 133):

> "In Exhibit 10 I have excluded any terminal property; therefore, it is a fair comparison with the figures shown on my Exhibit 9 after deducting the terminals, that is to say, the terminals in each case are eliminated. Exhibit 10 shows that we purchased for line changes that we are

now making between Wadena and Glyndon, Minnesota, 608.129 acres, containing 23.320 miles of right-of-way, the actual cost of which was $163,050.40, producing a cost per acre of $268.12, which compares with the $250.69 average cost per acre shown on Exhibit 9 of our right-of-way in Minnesota, excluding the terminals. Continuing the comparison further, the cost per mile of the right-of-way recently purchased is $6,991.87, which compares with the average value in Minnesota on Exhibit 9, excluding terminals of $5,172.56."

(NOTE.—The average Minnesota figures of $250.69 per acre and $5,172.56 per mile were contained in original Exhibit 9. It was revised for errors and as revised the figures were reduced to $248.53 per acre and $5,108.97 per mile.)

After the evidence of State Engineer Morgan was introduced, Cooper had a further appraisement made of eleven of the larger cities and towns on the Northern Pacific in Minnesota outside of the three large terminals. This was made in each place by competent people who reported their results without knowledge of the purposes for which they were required. (See Cooper Evid. Vol. 7, N. P., p. 3062.) Exhibit 76, Cooper (Vol. 1, N. P.) states a comparison between Cooper's valuations for the Company, Morgan's valuation for the State, and this appraisement by local real estate and business men in each of the eleven cities and towns.

These results are as follows:

Local Appraisers	$1,282,612.46
Thomas Cooper—Land Commissioner N. P. R. R.	911,440.05
D. C. Morgan—Engineer for State	455,667.92

Exhibit 77, Cooper (Vol. 1, N. P.) was offered in evidence by Cooper (Vol. 7, N. P., p. 3068). It is a statement from the records of the railway company in detail showing actual expenditures for right-of-way for new line of the Northern Pacific passing through the towns of Hawley and Lake Park (in Minnesota) and adjoining territory. The summary at the foot of the Exhibit shows the country right-of-way to have cost $142.15 per acre.

Summary.

	Acres	Cost	Per Acre
Hawley	31.173	$ 62,924.80	$2,018.56
Lake Park...	17.026	19,765.06	1,160.13
Country	565.840	80,431.59	142.15
Total	614.039	$163,121.45	$ 265.65

The former right-of-way lies alongside of the new strip purchased. Speaking of his own and the State's appraisement of the old right-of-way and the actual cost of the new, running through contiguous land of similar character and value, he testified (7 N. P., p. 3073):

> "Summarized, the right-of-way in the districts under consideration valued by the Company at $105 and $150, respectively, per acre, is reduced by the State to $54 and $72 per acre, whereas, the actual cost of the new right-of-way was $142.15 per acre."

Testifying further regarding the actual cost of right-of-way through the towns of Hawley and Lake Park as supporting his own prior figures and throwing strong light upon the character of the State appraise-

ment by the assessment and recorded sales method he said (p. 3073):

"Q. Now, will you compare the actual cost of this new right-of-way within the limits of the town of Hawley (or the village or city, whichever it is,) with the valuation of the old right-of-way testified to by Mr. Morgan, the State's Engineer, and your own valuation as testified to by you in this case?

A. In the report made by the Company to the State, the right-of-way, within the corporate limits of Hawley, aggregating 48.76 acres, was valued at $58,512, being at the rate of $1,200 per acre.

Q. And that is the same as your testimony?

A. And that is the same as my testimony in this case. In the report made by the State engineer, this item is valued at exactly one-half of the Company's valuation, or at the rate of $600 per acre. I am now speaking, in both cases, of right-of-way value. I present a map on which is shown the old right-of-way through the village of Hawley, colored yellow, being the right-of-way just described. On the map is shown, colored red, the right-of-way for the new line through Hawley, aggregating 31.17 acres; the actual cost of which as shown by Ex. 77, was $62,924.80, being at the rate of $2,018.56 per acre. The relative value as land of the two rights-of-way is in favor of the old right-of-way, as it runs through the heart of the village, whereas, the new right-of-way is on one side. Assuming the value of the old right-of-way at the same rate per acre as the actual cost of the new right-of-way, to-wit, $2,018.56 per acre, and being more valuable, it should be higher, it would produce a total of $98,424.99, as compared with $58,512, the valuation of the Company and $29,256, the valuation of the State engineer. It is evident, therefore, that the valuation of the Company on

the old right-of-way was entirely too low, as the 31.17 acres in the new right-of-way actually cost $4,412.80 more than the value placed by it upon the 48.76 acres in the old right-of-way; notwithstanding which, the State engineer reduced the Company's valuation exactly one-half. Pursuing the comparison further, if the Company had been able to purchase the new right-of-way at the value placed by the State upon the old right-of-way, to-wit, $600 per acre, it would have cost $18,702; its actual cost was $62,924.80.

Q. Are you able to make a similar comparison between the actual cost of the new right-of-way in Lake Park,—your valuation of it, as testified to by you in this case, and the valuation placed upon it in the testimony of Mr. Morgan in this case?

A. Yes, sir.

Q. Will you do that, if you please? (Here is a map which may be used for reference.)

A. In its report to the State, the Company placed a right-of-way value of $1,200 per acre upon its right-of-way within the corporate limits of Lake Park, making a total for the 29.34 acres of $35,208. In the report of the State engineer this same right-of-way is given a right-of-way value of $600 per acre, being exactly one-half of the company's valuation. On the map the 29.34 acres of old right-of-way is shown, colored yellow; abutting thereon is shown, colored red, an additional width of right-of-way, purchased within the past three years, containing 17.02 acres; the actual cost of which, as shown by Ex. 77, was $19,765.06, or an average of $1,160.13 per acre. It will be observed that the two strips of right-of-way lie side by side, therefore have substantially the same value as land. The old right-of-way was valued by the Company at $1,200 per acre. The new right-of-way actually cost $1,160.13 per acre. Pursuing the comparison further, if the company could have purchased the

new right-of-way at the price per acre, $600, at which the old right-of-way is valued by the State, it would have cost $10,212; the actual cost was $19,765.06.

Q. Your Company has, in late years, bought considerable real estate at Dilworth, for the purpose of new terminals; when was that property purchased?

A. All of that property was purchased within the last three years.

Q. Was that included in the testimony of Mr. Morgan?

A. Part of it is included in the Company's report to the State, and the part that we reported to the State Mr. Morgan also valued. We purchased some additional since, which is not included in my report or his report.

Q. Can you make a comparison between the actual cost of that property, the valuation returned by you in your testimony of the property and the valuation placed upon it by Mr. Morgan in his testimony?

A. In its report to the State, the Company reported 378.17 acres of terminal property at Dilworth, as having a market value of $50 per acre and a value for railway purposes of $80 per acre. Since the report was made, the Company has purchased some additional property at that point, and the Northwestern Improvement Company has also purchased some property. The two companies now own together 472.47 acres at Dilworth, the right-of-way being shown, colored red. The actual cost to the two companies of the 472.47 acres was $40,239.70, an average per acre of $85.17. All of this property, considered as land, is of substantially the same value. Therefore, the Company's valuation of $80 per acre was really $5.17 less than actual cost, notwithstanding which, in the report of the State engineer, the property is valued at $72 per acre, being $13.17 per acre less than actual cost."

Charles Hayden gave similar testimony in reference to the care taken to secure information and determine the value of the right-of-way and station grounds outside and beyond the three large terminals. In addition to his extended experience during his connection with these properties in the purchasing of about 100,000 acres, involving an expenditure of between eight and ten million dollars, he testified that for the purpose of determining these values he made several trips along the Minnesota lines of the Great Northern acquiring information to assist his own judgment (see testimony Vol. 2, G. N., 162, et seq.).

Complainant's Exhibit 9, Hayden, is a statement covering all right-of-way and station grounds of the Great Northern system by states. The recapitulation on page 3 of the exhibit shows a valuation of all lands outside of terminals, but including 370 smaller towns and villages along the system of over 200 inhabitants each. For the system and also for the state of Minnesota the average value per acre is $201.

Exhibit 10, Hayden (Vol. 6, G. N.) is a statement in detail of all of the 2,029.44 miles of the Great Northern in Minnesota and will be seen to include 35,273.42 acres of right-of-way and station lands in which is embraced the station areas in 307 towns, villages and small cities in the State. The total value placed upon these lands, outside the large terminals, by Hayden, was $7,100,379.00 and this figure was reduced by the Master to $5,325,284.25. Dividing the Master's valuation by the acreage (35,273.42) shows an average value determined by the Master of $150.97 per acre.

As shown heretofore it was agreed by all of the witnesses, including Engineer Morgan speaking as the official representative of the defendants, that lands available for railroad use cost on the average in the market more than adjoining lands, not so available for that use. It was agreed that outside of the large terminals a factor or multiple of three times adjoining market values would produce on the average a fair value of right-of-way devoted to railroad use. Upon this agreement, therefore, it is fair to divide the average value per acre as determined by the Master of $150.97 by three, in order to disclose the average value throughout the State, of lands adjoining the railroad right-of-way as a basis for the railroad value thereof. This division shows $50.32 per acre.

The following figures from public records of the State of Minnesota and the United States Bureau of the Census show average value of farm lands in Minnesota and the increase in ten years:

	Minnesota	
	1900	1910
Acres Farm Land (Mineral Lands for Minnesota, only excluded for 1910)	36,766,382	42,611,174
Assessed Valuation of Farm Lands	$266,639,396	$427,020,342
Assessed Value per acre	$7.22	$10.02
United States Census value per acre	$26.00	$46.00
Increase in Assessed Valuation of Farm Lands per acre		39%
Increase in Census Valuation of Farm Lands		77%

The map of the Great Northern lines in Minnesota (Vol. 6, G. N., Hogeland Exhibit 1) shows that they lie largely in the old and well settled agricultural parts of the state and the 307 towns, villages and small cities have with few exceptions, considerable areas of terminal grounds distinctly more valuable than farm lands. The detailed valuation of each town area in Complainant's Exhibit 10, Hayden (Vol. 6, G. N.) shows this and justifies the conclusion that as against an average farm land value of $46.00 the average value of $50.32 per acre including 6,036.06 acres of town and city terminal and yard areas (outside the three large terminals) is exceedingly low. Hayden's valuation of $201.00 per acre divided by the multiple of 3 would show but $67.00 per acre, which, considering the large percentage of town areas involved, was plainly conservative.

In the case of the Northern Pacific a similar computation may properly be made in order to test by this approximate method the soundness of these values.

Complainant's Exhibit 9, Cooper (10 N. P.) shows 19,896.91 acres outside the three large terminals. The Master fixed the value for these outside lands at $3,708,693.45 or an average value per acre of 186.39, which, divided by the agreed multiple of three shows an average adjoining land value of $62.13 per acre.

This exhibit also shows that upon the Stillwater branch and the line between St. Paul and White Bear, a suburban line, values are relatively high because of proximity to St. Paul. Eliminating these branches an average per acre for the rest of the state of $173.41 per acre is reached, which divided by the multiple of

three shows an average of $57.80, based upon the average or ordinary use.

Complainant's Exhibit 75, Cooper (Vol. 9, N. P.) shows that outside the three large terminals there are 78 cities, towns and villages on the Northern Pacific Minnesota lines many of which judicial knowledge will recognize as of substantial importance. The lesser branch line mileage of the Northern Pacific as compared with the Great Northern and the lesser mileage in the northern portions of the state, where population is less dense and values relatively lower, at once explains the reason why a relatively higher average price per acre is found upon the Northern Pacific.

The inclusion in each instance of the large number of towns, villages and smaller cities makes it perfectly plain that, in comparison with the official census figures shown above, the values fixed in the rural districts outside these terminals by the Master was exceedingly conservative. In point of fact there was no justification for the action of the Master in arbitrarily reducing these figures by 25 per cent, and it can only be accounted for out of an excess of caution.

Referring to the testimony of Charles Hayden, his re-direct examination in Vol. 2, G. N., pp. 203 to 321 and 332 to 340, states in detail the investigations and inquiries made to test and fortify his judgment on values throughout the State. To illustrate, he testified (Vol. 2, G. N., p. 337) that in the city of Morris, where he valued the right-of-way and station grounds at $1,800 per acre, he was guided by a sale made to certain citizens of Morris in 1899 of the original station grounds, in the business part of the city at that time, for an aggregate of $10,000, being at the rate

of $1,637 an acre, and that the consequent growth of the city in the intervening ten years justified in his judgment the value which he had determined.

One of the most convincing evidences of the conservative nature of the Great Northern and the Northern Pacific values outside of terminals was shown by a comparison of the actual price paid in 1883 by the Northern Pacific for a strip of the Great Northern right-of-way from Sauk Rapids to the outskirts of Minneapolis, 63 miles in length, and passing through several important stations. It appears that the average price paid for this strip, 43 feet wide, in 1883, was $211.32 per acre and that the value placed upon the same line by the witness Hayden in 1908 was but $223.20 per acre.

Concerning this transaction, Mr. Hayden testified (2 G. N., p. 326):

> "Q. Have you in your records any evidence in relation to a sale of part of the right-of-way from Sauk Rapids to the outskirts of Minneapolis, some years ago, by the Great Northern Company to the Northern Pacific Company, that is embraced in section 12 on the map?
>
> A. Yes, sir.
>
> Q. Well, now, will you briefly state just what that transaction was and the price paid per acre, and the date?
>
> A. The date of the deed is April 12, 1883. That deed is recorded in the Secretary of State's office, St. P., M. & M. Railway Book No. 1, at page 245. The consideration is $77,280. That conveyed to the Northern Pacific Railway Company the portion of the right-of-way then owned by the Manitoba Company, which was situated easterly of a line drawn parallel with and seven feet east of the center line of the Manitoba

Railway. That, in effect, gave them 43 feet in width of our 100-foot right-of-way. It also gave them whatever station grounds there were on the east side of that parallel line. There are about 63 miles of the line from Sauk Rapids to Minneapolis, and the acreage deeded to the Northern Pacific 365.07 acres, which at the consideration paid by them amounted to $211.32 an acre, or $1,221 per mile. In the estimate of cost of reproduction of that same line we have a total acreage of 484.75 acres, an average value of $223.20, making an average per mile of $1,710, total value of $108,198, for cost of reproduction.

Q. The Northern Pacific sale was made in 1883?

A. 1883, yes, sir.

Q. Just what use did the Northern Pacific make of that strip? What I want to have you show is whether or not the track that they built was in effect a double tracking of the Manitoba track, or was it utilized for an independent right-of-way and track?

A. It was used as an independent track; that is, they didn't have any benefit of our grade for their grade; they built their own bridges and their own culverts entirely separate, and they acquired additional right-of-way on the east side of the strip which they purchased from us, and they made an entirely independent line of railroad from ours.

Q. Are the two tracks close, side by side, throughout that distance, or do they diverge and separate?

A. Well, in some places they are reasonably close together, and in other places they are a considerable distance apart. Of course, the only distance apart they could be is the width of their right-of-way, not as we would call a double track, —12 or 14 feet apart. I would like to state further, Mr. Holden, that the deed of conveyance expressly reserved all tracks, switches, buildings

and bridges and everything of the kind; nothing transferred except the bare land in that transfer."

The foregoing extracts from testimony regarding land values fairly show that the judgment of experienced men was convincingly tested and supported by actual sales under fair and normal conditions. Much additional evidence of the same character is in the records. It seems, however, that the foregoing will establish that unsupported opinion evidence of land values was not the basis of the lower Court's action but that it established the values of these lands and great terminal properties only after convincing proof that the judgment of the appraisers was amply sustained. This clearly appears from the following extract from the opinion (1 N. P., p. 423):

"Returning now to the finding of the value of the first item of the schedule, it is sustained by the testimony of nine real estate dealers familiar with the values of the properties in their respective cities, by the testimony of the officers of the companies who were well acquainted with the properties and their values, who had purchased rights-of-way that cost many millions of dollars, and by the corroborative evidence of purchases and sales at prices approximating the values found. It is met by the theoretic value of Mr. Morgan based on his assessment sales method of proof, and by evidence of purchase and sales corroborating it. But the foundation of this value is what copying clerks wrote that grantors in deeds wrote were the consideration of their conveyances of certain properties, and all of these parties were strangers to the parties to this suit. It is conditioned by Mr. Morgan's opinion of the number of such considerations it was necessary to use to discover the true relation of considera-

tions of deeds or presumptive values of properties described therein to their assessment values, by his opinion as to the width of the strips on each side of the rights-of-way and as to the number and lengths of the sections of the strips requisite to ascertain just measures of the values of the rights-of-way between them. He concedes, and counsel for the defendants do not deny, that his method would not reliably indicate the value of any specific lot or tract of land of moderate dimensions, and it is difficult to understand how it can escape the maxim, *"falsus in omnibus."* A careful consideration and analysis of Mr. Morgan's testimony and of the other evidence introduced to support it has convinced that they are too indirect, uncertain, and inconsequential to overcome the direct and convincing proof of the values of these properties which the complainants have made, and the exceptions to the Master's findings of these values must be overruled."

Evidence Regarding Land Values Offered by Defendants Below.

The extract from the opinion below states the character of the evidence offered by the defendant Commissioners and Attorney General upon this branch of the cases. It rested substantially upon the so-called Assessment and Sales method vouched for by Engineer Morgan.

The Master said regarding it (Vol. 1, N. P., p. 222). (Italics ours):

"The Master has not overlooked the testimony offered by the State bearing upon these valuations and has given to it such consideration as in his opinion it was entitled to. It is proper to say, however, that it has not impressed him as entitled to much weight. *The avowed purpose of*

the State was to get away from opinion values as much as possible, owing to the fact that witnesses are necessarily and unconsciously influenced by the interests of those at whose instance they are called, however fair and unbiased they may intend to be—considerations which the Master in fixing values has kept in mind. *To this end the State has not offered the opinion of any witness as to the value of any of these terminal properties,*—ignoring, as it would seem, the fact that real estate values are necessarily and largely a matter of opinion when applied to any particular tract or parcel of land. As a substitute therefor the State's engineer and chief witness on this subject has adopted a method, in each of the three terminal cities, substantially as follows, taking the city of St. Paul as an example.

He ascertained from the records the selling price of genuine sales of land for a period of years, and amounting to a large number, in every part of the city. The selling price of the lands without improvements, so far as this could be ascertained, was compared with the assessed value thereof, and it was found that on the average the assessed value was about sixty per cent. of the selling price of such lands, and from this comparison the market value of the lands for general purposes was ascertained. Then the lands at varying width on each side of the side of the center line of the railroad land to be valued was divided into sections so that the lands in each section, according to his judgment, should be as nearly as practicable of like value, and the assessed value of the lands in such section was obtained and such assessed value was determined to be sixty per cent of the market value of the lands assessed. The market value, or, as he styles it, the "true value" so found was then applied to the railroad lands within the section, and to find their railway value, seventy-five per cent thereof was added to such market value, it having been

determined by him that railroad companies have to pay on the average seventy-five per cent more for properties required by them than the market value as so found.

Such, in brief, is the State's method of producing terminal property values, and generally known as the assessment and sales method.

It is conceded that when applied to any particular tract of land it cannot be relied upon, but it is claimed that when applied to extensive contiguous tracts, as are rights-of-way, the doctrine of averages will bring about reasonable correct results. To make a market value assessment, the assessor could not rely on such methods with respect to any particular tract, but would be compelled to make a personal inspection and determine whether assessment must be reduced or increased and where it stood with reference to such average. We can understand that, for the purpose of equalizing values as between counties where many contiguous sections of land are under consideration and for the purpose of making each county pay its relative proportion of state taxes, such method would be of great value by reason of the broad base for purposes of comparison, but the relative market value for the counties having been ascertained, then a personal inspection by the assessor would be necessary of each tract assessed to determine whether the assessment must be reduced or increased, that is, whether as previously assessed it was above or below the general average.

The evidence shows that the railroad lands in St. Paul constitute about eight per cent of all the assessed lands in the city, and, distributed among all the railroads owning terminal properties, each has but a very small per cent thereof. These considerations, added to the notoriously gross inequalities of assessments, compel the Master to give little weight to testimony of this character. On the other hand, he does not conceive he is

bound to accept opinion testimony as absolute but only as a large determining element in connection with all the facts and circumstances disclosed in the evidence, and this has been done in reaching his conclusions. He has given careful consideration to actual purchases recently made in acquiring property for railroad purposes and cited to show that they substantiate values fixed by the witnesses on either side, for of course they are of great value for such purpose."

Regarding Morgan's method the lower court also said (Vol. 1, N. P., p. 419):

"The evidence for the defendants regarding this item consists of an estimate made and verified by Mr. Morgan and corroborating purchases and sales. Mr. Morgan had never bought and sold any real estate, except his homestead, nor was he acquainted with the value of real estate in general. To ascertain the value of the terminals in each of the three cities he took from the county records the considerations recited in the records of deeds of a large number of lots and lands in each of the cities, compared them with the assessed values of those lots and lands and found the per cent that on the average the assessed values were of the considerations recited in these records. In St. Paul this was about 60 per cent. He then laid out strips of lands of varying widths along each side of the railway lands he desired to value, divided these strips into such sections as he thought were of about uniform value, found the values of the land in these sections from their assessed values on the theory that the assessed values were, in St. Paul, 60 per cent of their real values. From these values of the sections of his strips he deduced the values of the railway lands between the strips by a comparison of areas. To the values of the railway lands thus ascertained he added 75 per cent be-

cause in his opinion it costs railroad companies 75 per cent more than the normal market value of lots and lands in these three cities to obtain such irregular tracts as they need and now own. To ascertain the value of the lands outside of terminals, he searched out himself and by means of employes the prices at which many lots and lands throughout the region traversed by the railroads had been sold, and from these prices he estimated the value of the lands of the railway companies, and then multiplied these values by three, because, as he testified, it costs railway companies three times the normal value of lands to procure the irregular tracts necessary for their rights-of-way and station grounds through agricultural lands and the smaller towns, cities, and villages. By these means Mr. Morgan found and testified that the cost of reproduction, and hence the present value of the land for right-of-way, yards, and terminals, of the Northern Pacific Company was $15,385,078.47. At the request of counsel for the defendants he made another estimate in which he omitted to use the multiples 75 per cent of the normal terminal values and three times the normal values of lands outside the terminals, and disclosed therein the fact that if these multiples were not used his estimate would become $9,498,099.27, the value for which counsel for the defendants argue. *But neither Mr. Morgan nor any other witness came to say that the latter was the true cost of reproduction or the real value of this item of the schedule.* The defendants also introduced evidence of purchases and sales that tend to sustain Mr. Morgan's estimate of the value of this item."

Morgan testified at length regarding his method of finding values (Vol. 5, N. P., 1762-1827, 1863-1921; Cross-Examination, p. 1970-2024, 2033-2036, 2117-2182, 2273-2382;; Vol. 6, N. P., p. 2522-2607;

Vol. 8, N. P., p. 4177; Cross-Examination, p. 4191-4212).

The analysis of his method contained in the Master's' Report and the opinion below supplemented by an examination of his testimony justify the following comments upon it:

(1) The assessment and sales method of valuation is not based upon railroad use of land but upon composite averages of agricultural, residence and business use.

(2) It rests upon average assessment values of adjoining lands in private and commercial use, notoriously unequal and adjusted with reference to uses wholly foreign and inferior to railroad use.

(3) It ignores all individual conditions that create value in the particular lands under consideration, because it is an average of assessment values, no single element in which was designed to reflect any relation to value of lands available for railroad use.

(4) It does not produce a correct result in any single case or group of cases; this is admitted.

(5) It rests upon opinion of its inventor who claims no experience in acquiring railroad or any other kind of lands.

(6) The size and location of the sections depend upon his judgment and by changing the size, different results are obtained; therefore the proper size of each section is mere matter of opinion.

(7) In failing to produce a correct result in any case or number of cases less than the whole, the assertion that it produces a correct result in the whole, is bald assumption with no basis of fact or experience to support it.

Bearing in mind that there is agreement between the witnesses that present cost of acquisition presents "probably the most stable basis that can be reasonably devised for systematic and thorough consideration of the problem of physical values" (Morgan Report, Vol. 10, N. P., Complainant's Ex. N. P.), it has already been shown that *market value of lands based upon highest available use* is the necessary and logical test. It is the only tenable basis that can be adopted. Morgan sought to find market value, but by deliberate purpose the market value thus sought was that reflected by assessment and selling price of adjoining lands having no value or availability for railroad use. It therefore does not reflect the fair value of lands devoted to that use.

That this omission was deliberate appears from the following testimony (Vol. 5, N. P., p. 1892):

> "I have been proceeding upon the theory of reproducing the railroads of the state of Minnesota, and upon that theory it was necessary to pre-suppose that the lands now occupied by the railway companies would be unoccupied for that purpose, and it was therefore impossible to take into account, in connection with the question of reproduction cost, what these lands might be considered worth because at the present time they are utilized for railway purposes. I think I explained in my testimony, Saturday, that if we pass upon these lands because they are used for railway purposes, it is very difficult to differentiate between its value as land and its value because it is utilized for railway purposes. I think I stated further, that if the item of utility is to be considered—and I believe that it is in some respects—yet it cannot be made the basis for reproduction cost; and, as I stated in my testimony,

Saturday, if utility is to be considered, I would probably not be in a position to criticise the values that have been turned in by the railway companies; but on the basis of reproduction cost, where these lands must be considered as lands, I could not take into account the question of utility."

Wherein there is in law, authority or justification for determining value of these lands "without reference to present use" is not known because the recognized rule requires value to be ascertained not only *with* reference to present use but also to every reasonably available use.

Boom Co. v. Patterson, supra.

The judgment and opinions of experienced men were not sought by the state in determining values in the three large terminals. This may be explained by reason of the fact that value of the lands based upon their availability for railroad use was not desired.

He further testified (Vol. 5, N. P., p. 1765):

"Q. You entered into the employment of the Railroad & Warehouse Commission of the state of Minnesota upon what date?

A. January 15, 1906.

Q. And the particular purpose of your employment was the valuation of the railroad properties in the state of Minnesota, I believe?

A. It was."

And on page 1971 (Vol. 5, N. P.):

"Q. Now, the purpose of the valuation was to furnish a basis to aid in the establishing of rates,

was it not, and not for the purpose of taxation, or for the purpose of the financial control of the railway companies?

A. Well, probably I am not in a position to say wholly as to that. The scope of the work—it was sought, I think to make it as broad as possible, so that it might apply to different problems, and perhaps the basis which would be proper for one problem would not be proper for another, and in that way it was broadened to show the cost of reproduction and present value.

Q. Well, your understanding was, that inasmuch as the method of taxing the railway properties of the state was the indirect, or gross earnings method, the purpose of this investigation to get at one of the facts touching the value, was primarily for the purpose of rate-making or rate regulation?

A. That was a subject that was discussed by the Commission, in my presence, and I know that the question of a basis for rate-making was one of the important questions raised.

Q. Your understanding was that it was the primary purpose of the thing, wasn't it?

A. Yes."

He further testified (Vol. 5, N. P., 1973):

"Q. Did there any facts appear of record with respect to the cost, reproduction cost new, or the value of the Northern Pacific Railway properties, or the properties of any of the companies engaged in this litigation, and were the same in the office of the Commission, and were the same used by you to any extent?

A. No.

Q. So then your work was new work, as far as this state is concerned?

A. Entirely so."

Again (Vol. 5, N. P. 1982):

"Q. Well, I wanted to get just the rule, if I can. Now, let me see if I have it, by way of application, in St. Paul. There were examined by you and others, the deeds which evidenced bona fide sales, "normal sales," you call them, of property during a short period of years in this city. Now, after having found the consideration paid, you went to the assessor's office and found the assessed valuations of the property and established, in each instance, a percentage showing the relation of the assessed value to the consideration expressed in the deeds?

A. Yes.

Q. And then you took the sum of the considerations and the sum of the assessments and got at an average of the whole; is that the idea?

A. That is correct.

Q. And this examination covered the entire city?

A. It covered the entire city of St. Paul.

Q. And as a result of it you got or established in St. Paul, to your own satisfaction, at least, the fact that, generally speaking, within the corporate limits of this city, the relation of assessed value to actual market value, on sales between individuals, was 60.2 per cent?

A. For the city as a whole.

Q For the city as a whole? *Now, you do not claim Mr. Morgan, that that rule, applied to a single tract, or, indeed, to a few tracts, would indicate a true result?*

A. *No.*

Q. You think it does fairly well indicate the relation of the assessed valuation, as a whole, to the real value or market value, as a whole, in the town?

A. Yes, from my investigations it seems to represent that fairly."

(NOTE—Thus the basis of the entire plan rests upon his personal and it must be admitted, inexperienced opinion.)

He further testified (Vol. 5, N. P. 1893) regarding the report by the Special Committee (appointed by the Common Council of St. Paul to ascertain and report to the public authorities the relation between assessed value and actual value throughout the entire city) that this report (Vol. 10, Complainant's Exhibit 65, Morgan) showed a range of percentages running from about 30 or 34 to 138 per cent.

Having determined that throughout the entire city, the average assessed value of all sorts and conditions of property, vacant and improved, was 60 per cent of the so-called true value, he testified that he divided the terminal lands of each railroad into sections. These were of varying lengths dictated in accordance with his judgment; an arbitrary quantity of territory on either side of the center line was also included and investigations were made to ascertain the selling price of such parcels therein as had been sold within recent years.

Concerning the results obtained, he testified on cross-examination (Vol. 5, N. P., p. 1994):

"Q. * * * * Now, it is apparent that the relation of assessed value to the sales value in your narrow strips along the right-of-way, on your sectional division maps, might be a different percentage from 60—for the whole town?

A. Yes.

Q. When you got your sales in that limited territory, your problem, of course, was to get the market value of the right-of-way of the railroad near by. Now, what percentage did you use to get at that—the 60, the percentage in the whole town, or the percentage which you established (if you did establish one) in the divisions? Do I make my question clear, Mr. Morgan?

A. Yes, we used the percentage of 60 as a whole. We didn't undertake to take into account the individual inequalities which existed in these respective districts, because when we confined our investigations to a small area, there might perhaps be only one or two sales in that locality, *and they might not represent anything like the correct condition.*

Q. That is to say, the relation of assessed value to the selling price in these narrow divisions indicated on your sectional division maps would vary a great deal?

A. Yes.

Q. And you considered that *not reliable* for the application of this sales-assessment method of getting at the value of lands?

A. *Well, individually, yes.*

* * * * * *

A. There might be some cases where it would be all right, because property had been moving actively, and in other cases it would not; and, for that reason, we concluded that it would be better to arrive at a general average; *and I appreciated, from the beginning, that this would produce inequalities, as applied to any individual section into which the Northern Pacific might be divided in the city of St. Paul;* but, where that might be low, on the other hand, a reverse of that condition in other localities would produce a higher value. The result is that those compensate one way and another, and we reach fairly equal ground in considering the problem.

Q. *That is, your idea is that, applied to the whole, it will work out what you think to be the truth, but applied to the parts, separately, you would not say that?*

A. *That is correct.*

Q. So that these figures, then that you have made, with respect to the value of any short piece of terminal lands in the city, you would not feel prepared to defend the value of that particular

tract, but taking the whole terminal lands of all the railroads in the city, or of any particular railroad in the city, you believe that the truth is approximated? Is that a fair statement of the idea, Mr. Morgan?

A. Well, I wouldn't want to say that I am not prepared to defend the value in some cases.

Q. Well, I mean generally. I am not now speaking of the exceptional.

A. Generally—? Just read that question, please.

Question read.

A. That is correct.

Q. Now, to illustrate that a little bit: St. Paul is, in some respects, peculiar as to topography, is it not?

A. In some respects, yes.

Q. Take, for example, the land lying between the Mississippi river and the bluffs extending from the Omaha bridge, where its track crosses the river from Mendota; take the land along the shelf at the foot of the bluffs, from there to Pig's Eye Lake, for example, you have, on one side, river all the way, have you not?

A. Yes.

Q. On the other side, you have bluff all the way, except where the Union depot yards are, where those creeks come down into the Mississippi river?

A. Yes.

Q. Now, your sectional map-scheme, without this key figure of 60, which you have derived at large in the whole city, would not work, would it?

A. Wouldn't work individually for some sections."

* * * * * *

"Q. Now, I say you could not establish any key per cent by your divisional maps that would work out any satisfactory results on that plan, could you? Do I make myself clear? For example, suppose you hadn't established your 60 per cent

in the whole city but took your divisional sectional maps showing lands on both sides of that railroad property owned by various companies from the Omaha bridge clear down below the fish hatchery to Pig's Eye Lake, you could not get any basis of comparison that would be correct or of value, could you, in the sections?

A. *In the sections, no, I should say not.*

* * * * * *

(Vol. 5, N. P., p. 2001).

Q. And the railroads, as a rule, follow the low places, the river front and these creek-beds and creek-basins and the valleys in St. Paul?

A. Yes, unfortunately they do.

Q. And, generally speaking, there is instant and abrupt change in topography?

A. In some cases, yes.

Q. Well, that is pretty general, in St. Paul, isn't it?

A. Well, it is general along the river, you might say, from the time that you leave the Omaha bridge until you get down to the union depot, and then it breaks, and you don't get the abrupt change until you get down in the vicinity of the fish hatchery, or just this side of there, but the plateau given over to railways, in the vicinity of the union depot and below there, is quite an extensive one, and it is a natural area that comes in there from the entrance of Phalen creek and Trout Brook creek into the Mississippi river.

Q. And that plateau is crowded to the utmost of its capacity with railroad tracks, is it not?

A. It is pretty well filled with railroad tracks, at the present time.

Q. So that the sales-method would not apply to any land in the plateau, practically?

A. Well, I wouldn't want to say that, because I have used the sales-method.

Q. Well, I mean the sectional sales-method?

A. Oh, some little individual section, no. No, it has got to be considered on broader grounds.

Q. *That is, you couldn't get at any percentage that was worth anything down there, without taking into account the lands on the hills and in the residence districts and business places, and all that, isn't that true?*

A. *Yes.*

* * * * * *

(Vol. 5, N. P., p. 2010).

"Q. *But, to get back to the general statement, the utility of the land or its adaptability, or its strategic value, in the problem of railroad construction and development, was not taken into account at all by you in these figures?*

A. *No, it has not been; and as I stated, in my direct examination, that that might be a proper thing to consider in connection with this problem as a whole.*

Q. I was just trying to get what you put in, that is all?

A. Yes, but so far as I was concerned, I did not undertake, on the question of the cost of reproduction, to consider these elements."

* * * * * *

In explaining his basis for determining the size of the different sections, he testified (Vol. 5, N. P., p. 2149):

"Q. Then the length of the railroad right-of-way or terminal lands, in each section, was made on an arbitrary basis?

A. It was.

Q. Wholly so?

A. Yes.

Q. And so with respect to the land on each side of the railroad land in each section, that also was made on an arbitrary basis?

A. It had to be.

Q. There was nothing else to go by?

A. Nothing else to go by. We tried to take in sufficient land to give us a fair index of values."

Mr. Morgan was examined in considerable detail regarding his basis both in city and country, and the cross-examination (pp. 1970-2182 and pp. 2273-2358) clearly uncovered the fact that the size of the sections being wholly based upon opinion, average results may be changed at will by altering the size of the respective sections. *It further showed by the admission of its inventor that it would not produce reliable results in any individual case or number of cases or in any individual section or sections.* Being admittedly unreliable in detail, the only support it receives is that, in Mr. Morgan's *opinion,* it is reliable when applied generally. A consideration of his cross-examination leads to the conclusion that the plan is utterly unreliable for any purpose and must be rejected.

It fails to reflect the value of lands derived from railroad utility and indeed fails to reflect actual or practical value at all.

Mr. Morgan substantially admitted this (N. P. 2297).

(Vol. 5, N. P., p. 2345):

"Q. —*So that, Mr. Morgan, your whole theory reduced to its last analysis, depends upon the infallibility of your judgment of assumption of the equality of value between the railroad lands and the non-railroad lands, in each section, does it not?*

A. *It depends upon the infallibility of the assumption.*"

* * * * * *

"Q. So that the size and shape of these sections depended upon your judgment, did they not, as to the equality of the value of the non-railroad lands adjacent to the railroad lands to be valued, in each section? It gets down to a matter of your opinion about it, does it not?

A. It comes down to a matter of opinion so far as the framing of the sections is concerned—

Q. That is what I mean.

A. —but so far as the results are concerned, it comes down to a matter of fact.

Q. Of computation, does it not, from these assumptions; it is a mere matter of computation, is it not?

A. It is a matter of computation.

Q. So that your whole scheme of valuation depends, does it not, upon the infallibility of your judgment of equality of value of non-railroad lands and railroad lands in each section?

A. It does to a certain extent; it might be modified, slightly, one way or the other.

Q. How could it be modified?

A. By changing the sections.

Q. Yes, that is it. *If you change the sections, you will change the result, generally speaking, will you not?*

A. *That is the idea.*

Q. Yes, sir.

A. And, as I say, my best judgment has been used in establishing the sections."

* * * * * *

(Vol. 5, N. P., p. 2357)

"Q Why, does your scheme amount to anything more than this; to establish the value of the land non-railroad, in each section by this assessment method and then come to the conclusion that the railroad land which has not been assessed is just that same value? Isn't that the whole thing there is to it?

A. That is the base.

It appeared that during the pendency of these cases Mr. Morgan was called as a witness for the St. Paul Bridge and Terminal Railway Company in a condemnation proceeding wherein that company was seeking to acquire for railroad purposes certain lands below Dayton's Bluff. He applied his theory to those lands and it is instructive to note this example of the way it worked in actual practice.

He testified (6 N. P., p. 2542):

Q. Mr. Morgan, have you recently, in any condemnation case, attempted to apply this theory of valuation of yours to see how it works getting new right-of-way?

A. Well, I gave some testimony recently in the case of the St. Paul Bridge & Terminal Railway Company against the owners of property lying down below Dayton's Bluff.

Q. And was your testimony on the subject of value?

A. It was.

Q. Both the market value (or true value) and the railroad value?

A. Yes.

Q. Was it the application, in its purity, of your theory that you have proceeded upon in valuing these terminals?

A. Yes, I applied the theory there.

Q. How much land was involved, roughly speaking?

A. I think some thirty-six acres.

Q. And your estimate of the railroad right-of-way value was what, in the aggregate, according to your scheme of valuation?

A. *As I recall, it was somewhere in the neighborhood of* $12,000.

Q. Was it as high as that?

A. That is my recollection of it. I haven't the

figures now, $10,000 or $12,000, somewhere along there.

Q. What was the award of the Commissioners?

A. *I think the award was about $41,000 for the property.*"

Commenting upon this result, he said:

"I think I stated in my testimony that there were cases where the valuation ran five or six or seven or eight or nine or ten times what the normal value of the property is; that has been in my testimony, I think, (in my direct testimony) several times, that you find individual cases where that condition prevails. Now, this happens to be one of those cases I am entirely satisfied that my estimate in respect to that property down there was a fair one. It is all that the property ought to be worth to the owners of it; and the fact that they have been successful in making the railroad company pay more doesn't increase the virtue of it."

* * * * * *

Finally, the narrow and as must be admitted, legally unsound basis upon which the entire Morgan plan of valuation rests is shown by the following testimony of the witness (Vol. 5, N. P., p. 2136). After stating that he ignored original cost and capitalization, he said:

"Q. You also ignored, wholly, did you not, the matter of value of the railroad properties, considered from the standpoint of efficiency as an instrument for conduct of transportation?

A. Yes.

Q. You also ignored the matter of utility and adaptability of the property for the purpose for which it was created and organized?

A. The property as a whole, yes.

Q. And all of its parts?

A. Yes, excepting in respect to the lands in the cities where certain pieces of property had been bought that incidentally come in in establishing the multiple.

Q. Yes, but in your figures and in the tables that you have furnished us here in getting at that, there was nothing taken into account for adaptability, utility or efficiency?

A. No, not on reproduction cost."

In connection with Mr. Morgan's cross-examination the Report of the Special Committee of the Common Council was offered in evidence (Vol. 10, N. P., Complainant's Exhibit 65, Morgan, N. P., see Vol. 5, N. P., p. 2172).

From the table contained in this exhibit it appears that the "Ratio per cent" of 60.2 exhibiting the relation between assessed value and market price was based upon 2,654 transfers of property; these represented property of assessed value of only $3,108,794 out of total value in whole city of $123,826,564.

The conclusions of the Committee were thus stated:

"But while there is less inequality of real estate assessment as between districts than has been generally supposed, it is undeniable that the assessment roll for every district bristles with numerous instances of gross inequalities in assessment as disclosed by the fair selling value of the property thus assessed. Many such cases are cited in the newspaper article referred to. It may be stated without fear of successful contradiction that in almost every district or locality within this city the owners of real estate assessed at not over forty per cent of its fair market value can sit on their porches and shy stones against or upon the real estate of less fortunate neighbors whose realty is

assessed nearly all or more than all it will bring in the open market.

By far the greater part of these very numerous instances of inequality in realty assessment which exists all over the city has arisen beyond question from the fact that for more than ten years there has been no thorough revision of real estate assessments within the city. Real estate in certain localities is now easily worth double its value in 1896, while in other localities values have advanced very slightly or not at all in the last ten years. This fact alone accounts for many or most of the gross inequalities present in our realty assessments."

* * * * * *

"It is needless to state further facts showing that the present real estate assessment of the city is permeated through and through with many glaring inequalities and that there should be, as speedily as possible a complete and thorough revaluation upon some basis which will produce reasonably equitable results."

* * * * * *

"But the fact nevertheless remains that probably not less than three-fourths of the real estate descriptions on the assessment books are still assessed at precisely the figures they were assessed in 1896."

The Committee made further detailed investigation into a considerable amount of property within the city and the second table in the exhibit shows a range of ratio percentage from 33 to 139.

Complainant's Exhibit 66, Morgan (5 N. P., p. 2172) is a table of percentages by wards worked out by the State Tax Commission and shows a range from 44.4 per cent in the Tenth ward to 64.8 in the Ninth ward.

These conditions affecting the value of results based on assessment figures as a safe guide to correct value of lands in the large terminals were confirmed by the real estate appraisers. The uniform conviction was expressed that because of notorious inequalities assessment values were wholly unreliable.

Thus O. L. Taylor (St. Paul) testified (2 G. N., 367):

> "A. I consider it a wholly unreliable factor, and therefore entitled to no practical consideration in determining upon the value of a piece of property."

To the same effect L. E. Elwood (Minneapolis), (2 G. N., 568).

Portions of the report of the State Tax Commission were offered in evidence (6 N. P., pp. 2537-2542). A single quotation from this remarkable document will show the inequalities of assessments in other portions of the state.

> "In Minnesota for nearly fifty years the mere caprice of the assessor, in which he has been sustained by the boards of review and equalization, has been substituted for the rule of the statute. The result has been what might have been expected, an assessment varying from twenty per cent to sixty-five per cent of the actual value of real estate and an even larger variation in the case of personal property." (From the same paragraph on page 8). "Where there is departure from the statute, no definite percentage has been selected and adhered to, so a variation great and far reaching has been introduced in the assessments throughout the state."

From the foregoing, it must therefore appear that the ratio of assessed value to market value whether it be taken in St. Paul, Minneapolis or in the State at large is utterly unsafe as a basis upon which to rely in so grave and important a matter as the fair valuation of these railroad properties now under consideration. As a basis it confessedly fits no individual case nor group of cases; it fixes no value for any purpose for any single piece of property. This, Morgan openly concedes. Finally, it produces no element of value based on railroad use.

Concerning his experience Mr. Morgan testified (Vol. 5, N. P., p. 2172):

"Q. Mr. Morgan, in your professional experience, you have not been called upon to acquire rights-of-way very much have you?

A. No, I have not.

Q. Never have had any experience in actually buying right-of-way land, have you?

A. No, I have been associated with those who have been purchasing right-of-way, and during the past four or five years, six years, I have devoted myself assiduously to a consideration of that problem, as related to the cost of reproduction, and endeavored to qualify myself for this work.

Q. Yes, but in the actual experience of doing it, you haven't had it?

A. I have not bought right-of-way.

Q. Or bought or sold land of any kind.

A. Well, I have bought my own lot in St. Paul and built my own house on it.

Q. That is about all, isn't it?

A. Yes."

In connection with Morgan's results, certain exhibits offered in evidence by Thomas Cooper should be examined.

Complainant's Exhibits 71 and 72, Cooper (10, N. P.) show the wide variation in the percentage relation between assessed value and actual purchase price of all lands in St. Paul and Minneapolis purchased by the Northern Pacific Railway Company, from January 1, 1905, to December 31, 1908, ranging from 1.9% to 142%.

Complainant's Exhibit 73, Cooper (10, N. P.) applies the Morgan plan to fix values of certain lands actually purchased in the two cities as contrasted with actual prices paid.

Thus the first example:

The value of all property purchased in 1906 direct from owners by the Railway Company should have been according to this plan of fixing values, $281,-421.04. It actually cost $354,110.61 or an excess of $72,689.57 or 26 per cent. The second example shows an excess of 99 per cent.

Complainant's Exhibit 74, Cooper (10, N. P.) bears on the same subject. All of these exhibits are explained in Cooper's testimony in Vol. 7, N. P., p. 3043, et seq.

In making his valuations of lands outside the large terminals, Morgan seems to have arbitrarily reduced the railroad appraisals by fixed percentages. This was made plain by Complainant's Exhibit 75, Cooper (10, N. P.), explained by Cooper in Vol. 7, N. P., p. 3055. The summary of these even reductions is as follows:

Comparison Summary.

"State decreased Company	1 Item	80%	or 4-5
"State decreased Company	4 Item	75%	or ¾
"State decreased Company	5 Item	66-2-3%	or 2-3
"State decreased Company	6 Item	60%	or 3-5
"State decreased Company	26 Item	50%	or ½
"State decreased Company	4 Item	33-1-3%	or 1-3
"State decreased Company	3 Item	25%	or ¼
"State decreased Company	3 Item	20%	or 1-5
"State decreased Company	16 Item	varying	
"State increased Company	2 Item	percentages.	
"Appraisal identical.....	8 Item		
Total	78 Items."		

The conclusion from this summary is inevitable that in nearly every case the state's figures were not the result of independent investigation but reached by a general downward revision of the railroad figures.

It is a fair statement that the evidence of each party was largely opinion in its character and under those circumstances some latitude must be allowed.

The essential point of difference, however, turned upon the quality of the evidence.

The State's Engineer was totally without experience in right-of-way purchases or valuations. This he admits (Vol. 5, N. P., p. 2172, and Vol. 8, N. P., p. 4191).

The bulk of the information he gathered was acquired through a force of men of whose character, judgment or experience, the record is silent.

The proof, however, of actual prices paid decided the issue. The average figures per acre shown compared with prices currently paid in the ordinary course of business led to but one conclusion. The quality of

the opinion is best tested by the proof of actual experience and the differences between the State and the complainant's figures in country right-of-way was on account of this added proof resolved against the State.

Construction Items.

Turning to the schedule of items upon the various exhibits, all of which substantially follow the basis prescribed by State Engineer Morgan and furnished to the railways of the state in printed forms upon which to make their returns to him under the investigation inaugurated by the State Railroad and Warehouse Commission, of which Complainant's Exhibit 2, Hogeland (Vol. 6, G. N.) is a type, it appears that items 2 to 28, inclusive, cover in detail all of the construction items entering into a completed new railroad.

Items 31 to 35, inclusive, cover equipment of various kinds.

Item 39 covers stores and supplies in Minnesota shown by the testimony to be essential for the proper conduct of a completed railroad.

Other items relate to other elements of necessary expense and will be considered hereafter.

Concerning the Master's findings as to the items of physical property and construction above referred to, the lower Court said (Vol. 1, N. P., p. 426):

> "Many other exceptions were taken to items which constitute parts of the values found by the master. Each one of them has been examined in the light of the evidence, the arguments, and the briefs. They challenge matters less important

than those that have been reviewed and no good purpose would be served by stating and discussing them in detail. Suffice it to say that none of these exceptions is sustained by the record, and the result is that the findings of the values of the Minnesota properties of the three companies by the master must be confirmed."

In the lower Court numerous exceptions were filed by both sides to the values of these different items as determined by the Master, which exceptions will be found in Vol. 1, N. P., as follows:

Complainant's Exceptions pages 287 to 319, inclusive.

Defendant's Exceptions pages 320 to 362, inclusive.

In explanation of the complainant's exceptions upon the action of the Master in fixing the value of lands for right-of-way and terminals and of the remaining items going to show the present cost of reproduction of the remaining items of property, it appeared to the complainants, and will be plain from a critical examination of the evidence, that in reducing certain of the values as claimed by complainants, the Master in fact worked an injustice to the complainants and without fair warrant in the evidence, reduced the values of certain items in the schedule. Concerning the weight of evidence in favor of the complainant's claims there was no reasonable ground for dispute. For these reasons and because as a result of these reductions, the Master unduly reduced complainants' valuations and fixed the results below what seemed fairly to be just, the complainants filed and urged these exceptions before the lower Court. Some reference thereto will

hereafter be made in the brief discussion of certain of these items that follows.

From the assignments of error taken by appellants to the action of the lower Court, there does not appear to be contention here made by appellants against the correctness of the action below in fixing any of the items embraced between Nos. 2 to 28, inclusive, comprising the physical items of construction, or from 31 to 35, comprising equipment, or item 39, comprising stores and supplies in Minnesota. Nevertheless, on account of the position apparently taken in general terms that there was error committed below in arriving at the cost of reproduction, it seems important to briefly indicate the substance and character of the proof covering these items and the action of the Master thereon. This is deemed important in order that in this Court it may be made plain that all of the values as fixed by the Master are conservative and low and rest not upon opinion or general estimates, but upon accurate inventories and appraisements, based upon records of actual quantities, definite measurements, and actual current prices taken from the railway records, vouchers and books of account.

The schedule shows that items 2 to 11, inclusive, which cover grading, ties, ballast, rails, track fastenings, switches, etc., track laying and surfacing, bridges, trestles and culverts, and Items 31 to 35, covering equipment, comprise the major items of construction expense.

In the Great Northern and Northern Pacific cases the Master found that State Engineer Morgan had found a higher value for cost of reproduction, new, of Items 12 to 28, inclusive, and 31 to 34, inclusive

(there being no marine equipment under Item 35) and in the light of Morgan's evidence regarding these items introduced by complainants thereon, the Master fixed the value of these Items 12 to 28, inclusive, and 31 to 34, inclusive, at the complainant's figures, which, as stated, are lower than those conceded by Engineer Morgan (See Master's report, Vol. N. P., p. 231).

Likewise, in the Minneapolis and St. Louis case, the Master ascertained that there was little difference between complainant in that case and Engineer Morgan and that the differences had been as to some items compromised by the parties so that the Master was able upon substantially undisputed proof to state these items in the Minneapolis & St. Louis case in the table in his report (Vol. 1, N. P., p. 237).

The only consideration, therefore, that needs to be now given to the schedule is in reference to items 2 to 11, inclusive, covering the larger and more important items of construction above referred to.

Exhibits and References to Testimony Regarding Items 2 to 11, Inclusive.

Northern Pacific Case.

Complainant's Exhibits.

(Vol. 10, N. P.)

Complainant's Exhibit 2, Darling, consisting of schedule covering Northern Pacific System, and details of cost of scheduled items by quantities and prices.

Complainant's Exhibit 3, Darling, consisting of schedules of Northern Pacific lines in Minnesota with details as above.

Complainant's Exhibit 4, Darling, showing actual cost of grading, including yardage, total cost, cost per yard and cost paid contractors per yard on 18 different lines recently constructed by the Northern Pacific Company, and on five different lines recently constructed by the Spokane, Portland & Seattle Railway Company, a subsidiary company owned by the Northern Pacific and Great Northern. Also cost of ballasting per cubic yard, cost of track ties and cost of track laying, surfacing and ballasting in Minnesota and other states, in the years of 1906 to 1908, inclusive, all taken from company records.

Complainant's Exhibit 5, Darling, showing cost of certain terminals by units.

Complainant's Exhibit 6, Darling, showing freight, passenger and locomotive mileage for the system in Minnesota in 1906, the percentage of each and a basis for apportioning equipment to the State of Minnesota.

Complainant's Exhibit 7, Darling, showing Northern Pacific mileage of all divisions touching Minnesota as of June 30, 1907.

Complainant's Exhibit 24, Berry, showing basis for estimating one mile of line single and double track plus proportional length of siding.

Complainant's Exhibit 25, Berry, containing estimated cost to reproduce Northern Pacific system as of June 30, 1906, based upon actual examination and inspection of property, and company records made in August, 1908.

Complainant's Exhibit 26, Berry, showing basis upon which estimate was made.

Complainant's Exhibit, Morgan, N. P., showing

basis adopted by State Engineer for stating cost of reproduction as furnished to railways.

Complainant's Exhibit 81, Darling, showing actual cost of contract grading work in Minnesota on sundry lines as specified, 1902 to 1908, inclusive, apportioned by mileage and different kinds of material, total charges and average contract and total cost prices; also actual cost of similar work done by company force.

Complainant's Exhibit 82, Darling, showing actual quantities, prices and amounts paid contractors for grading, 1897 to 1907.

Complainant's Exhibit 83, Darling, showing actual cost of ballasting by Northern Pacific 1906 to 1908, inclusive, divided into various items of cost per yard.

Complainant's Exhibit 84, Darling, showing actual cost of track laying by Northern Pacific 1906 to 1908, inclusive, divided into various items of cost per mile.

Complainant's Exhibit 85, Darling, which is a revision of complainant's Exhibit 3, Darling, showing cost of reproduction of lines in Minnesota as of April 30, 1908, with details showing classification of material, quantities and prices of each item in schedule.

Complainant's Exhibit 86, Darling, showing detailed quantities and prices of bridges, trestles and culverts in Minnesota; also comparative statement of estimated cost of same and differences between Northern Pacific estimate and State estimate; also actual cost of various bridges on Northern Pacific compiled from detailed cost reports in company's records.

Complainant's Exhibit 89, N. P., showing estimate of cost of reproduction of Minnesota Transfer Railway.

Complainant's Witnesses—Items 2-11 in N. P. Case.

William L. Darling:
Vol. 2, N. P., pp. 5 to 121: 534 to 593.
Vol. 3, N. P., pp. 936 to 1023.
Vol. 7, N. P., pp. 3207 to 3247.
John B. Berry:
Vol. 3, N. P., pp. 718 to 904.
Howard Elliott:
Vol. 4, N. P., pp. 1217 to 1240.

Defendant's Exhibits—Items 2-11 in N. P. Case.

(Vol. 9, N. P.)

Defendant's Exhibit R, Darling, sundry office buildings.

Defendant's Exhibit "S," Darling, mileage of Northern Pacific by states classified into various tracks, sidings, etc.

Defendant's Exhibit "FF," Darling, average cost of one mile of main track, branch lines and side tracks in Minnesota.

Defendant's Exhibit "II," Darling, freight rates on ties and lumber from Duluth.

Defendant's Exhibit "JJ," Darling, freight rates on rails and fastenings from Duluth and St. Paul.

Defendant's Exhibit "KK," Darling, ballast prices.

Defendant's Exhibit "LL," Darling, cost of track laying and surfacing per mile in Minnesota.

Defendant's Exhibit "OO," Morgan, cost of reproduction of Northern Pacific system in Minnesota based upon Estimate "B" omitting multiples in land values the adaptation and solidification; also containing Sheets "OO-1" to "OO-6," inclusive, sundry estimates in detail.

Defendant's Exhibit "PP," Morgan, Northern Pacific mileage in Minnesota as of June 30, 1907.

Defendant's Exhibit "QQ," Morgan, showing cost of reproduction of Northern Pacific lines in Minnesota based on Estimate "A," including multiples in land values and adaptation and solidification; also containing detailed sheets "QQ" to "QQ-14," inclusive, showing sundry appraisements in detail.

Defendant's Exhibit "RR," Morgan, containing comparison of various schedules of cost of reproduction, railway and state.

Defendant's Exhibit "TT," Morgan, containing comparison of schedule of cost of reproduction of St. Paul Union Depot property, state and railway.

Defendant's Exhibit "UU," Morgan, similar comparison Duluth Union Depot & Transfer property.

Defendant's Exhibit "VV," Morgan, containing similar comparison Minnesota Transfer Railway property.

Defendant's Exhibit "WW," Morgan, containing comparison Minneapolis & International Railway property.

Defendant's Exhibit "XX," Morgan, containing comparison of railway estimates of cost of reproduction in State of Minnesota as of sundry dates with State's cost of reproduction.

Defendant's Witnesses—Items 2-11 in N. P. Case.

Dwight C. Morgan:

Vol. 5, N. P., pp. 1762 to 2382.
Vol. 6, N. P., pp. 2522 to 2607.
Vol. 8, N. P., pp. 4177 to 4213.

Complainant's Exhibits—Items 2-11.

(Vol. 6, G. N.)

Complainant's Exhibit 1, Hogeland, map of Great Northern lines in Minnesota, showing plan of reproduction over agreed period of eight years necessary therefor.

Complainant's Exhibit 2, Hogeland, schedule of cost of reproduction of Minnesota lines as of June 30, 1908. Detailed sheets attached showing mileage, trackage and details of each item by quantities, classification of material and prices in the schedule.

Complainant's Exhibit 3, Hogeland, showing sources from which grading quantities for lines in Minnesota were compiled.

Complainant's Exhibit 4, corrected, Hogeland, and second amended Exhibit 4, Hogeland, showing actual contract grading quantities and prices and total charges therefore on all lines of Great Northern Railway Company, 1898 to 1907, inclusive, classified into mileage, different materials, yardage, unit prices and total charges.

Complainant's Exhibit 5, Hogeland, map of Minnesota lines.

Complainant's Exhibit 6, Hogeland, and 6, Corrected, Hogeland, showing actual cost of ballasting lines constructed by Great Northern Railway Company, 1901 to 1908, inclusive, as shown by construction books, classified into mileage, cubic yards, classified cost, total charges and average cost per yard.

Complainant's Exhibit 7, Hogeland, and 7, Corrected, Hogeland, showing actual cost of track laying and surfacing on lines constructed, 1898 to 1908, as shown by construction books, classified charges, total charges and average cost per mile.

Complainant's Exhibit 8, Hogeland, cost of reproduction of Great Northern Railway system as of June 30, 1908.

Complainant's Exhibit 13, Hogeland, Tie Circular and specifications for ties delivered on right-of-way by settlers.

Complainant's Exhibit 50, Hogeland, showing actual cost of track ties 1898 to 1907, inclusive, on sundry lines and average cost per tie for different periods.

Complainant's Exhibit 51, Hogeland, showing quantities moved by and prices paid to contractors for grading for all Great Northern lines in Minnesota, for which there are vouchers on file in Company records.

Complainant's Exhibits 52-A and 52-B, Hogeland, showing number of men actually engaged on certain construction work as compared with number of men sent to the work.

Complainant's Exhibit 54, G. N., estimated cost of reproduction of Minnesota Transfer Railway Company.

Complainant's Exhibit 55, Hogeland, comparison of railway and state estimates of cost of reproduction with explanation of differences.

Complainant's Exhibit 56, Hogeland, showing actual cost of work done under Authorities for Expenditures compared with estimated cost of work for years 1903 to 1907, inclusive, and percentage of actual cost over estimated cost for each year.

Complainant's Exhibit 65, Drew, showing amount of main track mileage actually constructed by Great Northern Railway Company, its predecessor and subsidiary companies, all now a part of the system, each year June 30, 1880 to June 30, 1908, inclusive.

Complainant's Witnesses—Items 2-11 in G. N. Case.

Albert H. Hogeland:
Vol. 2, pp. 2 to 60.
Vol. 3, pp. 990 to 1066.
Vol. 4, pp. 1557 to 1719.
James J. Hill:
Vol. 3, G. N. pp. 1232 to 1353.
John F. Stevens:
Vol. 2, G. N., pp. 408 to 553.

Defendant's Exhibits—Items 2-11 in G. N. Case.

(Vol. 5, G. N.)

Defendant's Exhibit "C," Morgan, showing comparison of railway and state's cost of reproduction of lines in Minneapolis.

Defendant's Exhibit "C-1" to "C-15," Morgan, inclusive, showing sundry appraisals in detail.

Defendant's Exhibit "D," Morgan, showing comparison of railway and state's cost of reproduction of Minneapolis Union Railway.

Defendant's Exhibit "E," Morgan, showing railway and state's cost of reproduction of Minneapolis Western Railway.

Defendant's Exhibit "F," Morgan, comparing unit prices on grading in earth, state and railway.

Defendant's Witnesses—Items 2-11 in G. N. Case.

Dwight C. Morgan:
Vol. 3, G. N., pp. 1354 to 1475.

Minneapolis & St. Louis Case.

Complainant's Exhibits—Items 2-11.

(Vol. 6, M. & St. L.)

Complainant's Exhibit 2, Scott, map of system.

Complainant's Exhibit 3, Scott, single track mileage by states.

Complainant's Exhibit 4, Scott, fixed properties and apportionment of rolling stock.

Complainant's Exhibits 7 and 7-A, Scott, cost of property and sundry lines constructed.

Complainant's Exhibit 28, Cutler, cost of reproduction of M. & St. L. lines in Minnesota in 1906.

Complainant's Exhibit 30, Cutler, detailed summary of appraisement.

Complainant's Exhibit 31, Morgan, comparison of complainant's and state's cost of reproduction and differences.

Complainant's Exhibit 32, M. & St. L., cost of reproduction of Minnesota Transfer Railway Company.

Complainant's Witnesses—Items 2-11 in M. & St. L. Case.

Lemuel G. Scott:

Vol. 2, M. & St. L., pp. 1 to 14.
Vol. 3, M. & St. L., pp. 606 to 614.

Alvin S. Cutler:

Vol. 3, M. & St. L., pp. 909 to 950.

Defendant's Exhibits—Items 2-11 in M. & St. L. Case.

(Vol. 5, M. & St. L.)

Defendant's Exhibit "H," Scott, statement of locomotive, train and car mileage by states and percentages.

Defendant's Exhibit "I," Morgan, based on Estimate "B," showing cost of reproduction of Minneapolis & St. Louis Railway in Minnesota omitting multiples in land values and adaptation and solidification.

Defendant's Exhibit "J," Morgan, based on Estimate "A," showing cost of reproduction of Minneapolis & St. Louis Railway in Minnesota, including multiples in land values and adaptation and solidification.

Defendant's Exhibit "K," Morgan, showing comparison of railroad and state cost of reproduction of Minneapolis & St. Louis Railway in Minnesota.

Defendant's Witnesses—Items 2-11 in M. & St. L. Case.

Dwight C. Morgan:

Vol. 4, M. & St. L., pp. 1056-1117.

Note.

Before discussing the more important construction items, certain erroneous statements in appellant's brief should be disposed of. Appellants assert in several places (Brief p. 37, 195, 243) that in estimating reproduction cost, prices higher than those current at the time were used by complainants, because of the assumed necessity of construction.

The record is to the contrary and the exhibits hereafter referred to show that *lower* prices than current experience were in fact used. Comment is made upon oak tie prices in the Great Northern appraisal. The subject does not justify further discussion here because the actual unit prices *used* by the Master were in

nearly every instance much below current cost. This was particularly true in the case of tie prices. Appellants in Brief, p. 208, quote a *part* of a sentence used by the Master in support of this remarkable misconception of the record. The Master pointed to the reason why the state's price of 55.5 cents per tie was too low.

He said:

> "The State's valuation of 55.5 cents per tie is based upon prices in 1905 and does not allow for inspection and handling. The rapidly increasing price of ties since that time clearly justifies the finding here made."

Thus the only significance from the complete statement is that in the matter of ties, prices in 1905 were obsolete in 1908. Hogeland Exhibit 50 (6 G. N.) and Darling Exhibit 85 (10 N. P.), showing increases in actual prices paid, prove this.

As the general basis of prices used, Darling testified (2 N. P. p. 582) that they were either at current figures or below. This will be borne out as to each company by the consideration of the more important items that follows.

Discussion of Construction Items 2 to 11.

Item 2—Grading Quantities and Prices.

State Engineer Morgan in his report to the State (Complainant's Exhibit, Morgan, N. P., Vol. 10, N. P.) and his testimony, treated his allowance for adaptation and solidification of roadbed, which in his schedule

(Defendant's Exhibit, "QQ." Morgan, Vol. 9, N. P.) is Item 29, as a labor item properly appurtenant to cost of grading. The master therefore properly included the amount of this allowance as a grading item.

Morgan's estimated cost was brought down only to December 31, 1906, and the prices applied (see Complainant's Exhibit, Morgan, N. P., Vol. 10 N. P., subtitle "General Plan for Estimating the Plan, etc.") were as found to have been in the year 1905. The Northern Pacific estimate was as of April 30, 1908, and the Great Northern estimate as of June 30, 1908, therefore a portion of the differences in all items arose because of new work and construction after the date of Morgan's appraisement. The Master found from the evidence that the grading quantities and prices allowed by Morgan were insufficient.

Complainant's Exhibit 3, Hogeland (Vol. 6, G. N.) shows that 96 per cent of the yardage on the Great Northern lines was stated and computed from actual records on file in the company's office, which were thrown open to full examination by Engineer Morgan and his force. There was no substantial disagreement in Northern Pacific quantities (Morgan, Vol. 5, N. P., 1829) and the actual records in the case of the Great Northern were accepted as against the State's estimates.

The Master's report (1 N. P., p. 225) shows that as to unit prices the weight of evidence was in favor of the complainants and this chiefly because it was clearly shown that Morgan failed to allow an adequate sum per yard for the cost of doing the work incurred by the company over and above the price paid contractors for their work. Complainant's Exhibit

Second Amended 4, Hogeland (Vol. 6, G. N.) shows from actual experience, ranging over ten years on the Great Northern, an average *contract price* of 33.6 cents per yard and an average *total actual cost* of 44.1 cents per yard, the difference representing the average additional cost to the company above contractor's price. Hogeland, Chief Engineer of the Great Northern, in Exhibit 2, Hogeland (6 G. N., Item 2) based his estimate upon an average price for all materials of 33.8 cents, which, compared with the price on Exhibit 4, Hogeland, supra, shows that his estimate was much below current cost. He testified regarding Exhibit 4 (2 G. N. 149) that it was prepared from the records a considerable time after his estimate contained in Item 2, Exhibit 2, Hogeland, was made and prepared in order to test the accuracy of his judgment. (See also Hogeland testimony, 2 G. N., p. 17, et seq.) The average actual cost paid contractors for work on the Minnesota lines shown in said Exhibit was 23.9 cents and the average total cost on said Minnesota lines was 36.7 cents, which again confirms the conservative character of the average cost upon which he based his estimate. In stating his quantities he included the yardage of portions of certain lines which had been abandoned, but which, in case of reconstruction it would have been more economical to construct as originally laid. Other abandoned lines not of that character, he did not include but the Master disallowed all quantities on abandoned lines. Hogeland analyzed the difference in quantities between himself and Morgan in his testimony (Vol. 4, G. N., pp. 1557 to 1584). Morgan neglected in the Great Northern case to allow the customary engineering 10 per cent for settlement

and shrinkage in computing quantities from profiles. He allowed this percentage in the Northern Pacific case (Morgan 5, N. P., p. 2068).

Hogeland testified (4 G. N., p. 1561) to a number of instances wherein Morgan allowed less loose and solid rock in his estimate than the records of the Great Northern Company actually showed to have been paid for on original contracts.

Hogeland Exhibit No. 51, is a statement showing, as far as the records of the Company exist, quantities moved by and prices *paid to contractors* for which vouchers are on file, covering lines in Minnesota from 1885 to 1907, inclusive, aggregating 26,942,476 yards of earth, hardpan, loose and solid rock, aggregate cost $5,987,144.61, or an average *contract cost* of 22.2 cents per yard. On page 1699, 4 G. N., Mr. Hogeland explained this exhibit by dividing it into two periods, 1896 to 1901, inclusive, and 1902 to 1907, inclusive. In the first period there was paid contractors for all classes of material an average of 19.9 cents per yard and for the second period an average of 30.4 cents per yard, or an average increase of practically 50%. It must be remembered that these figures only cover cost per yard as paid contractors and do not include the additional items necessarily expended by the Company in the form of bills for overhaul, transportation of grading outfits, supplies for such outfits, transportation of laborers, powder, and all extra bills, such as for ditching, road changes, moving fences, rubbish, telegraph and telephone lines, and work of that character, none of which can be measured or paid for to the contractors by the yard. (See Hogeland's testimony, 4 G. N., page 1665.)

The result above referred to from Exhibit 51, Hogeland, showing an average price paid to contractors for the period of 1902 to 1907, inclusive, of 30.4 cents per yard when compared with the *total* average price per yard for all classes of material shown on item 2 of Exhibit 2, Hogeland, of 33.8 cents per cubic yard, again shows the conservative character of the latter's estimate, especially when compared with the results on second amended Exhibit No. 4, Hogeland, and the so-called constant of 10.5 cents representing the added cost to the Company per yard over and above the contract price.

The total average cost for all material in the estimate made by the State Engineer (Hogeland, 4 G. N., page 1661) is 28.7 cents per yard, and yet Exhibit 51, Hogeland, shows that it cost the Company between 1902 and 1907, inclusive, 30.4 cents per yard for contractors alone in the State of Minnesota without reference to the extra expense incurred by the Company.

Morgan made his physical examination of the Minnesota lines during the summer of 1906 by stopping his train not less than every two miles and making measurements, but it was clearly shown by the testimony of James J. Hill (Vol. 3, G. N., pp. 1242, 1251) and A. H. Hogeland (Vol. 4, G. N., p. 1647) that any such method could not produce accurate information and would not give any sufficient knowledge as to the settlement of yardage into swamps, sink-holes and places of that character, of which the testimony shows there are a very large number in Minnesota. The testimony of John F. Stevens for many years Chief Engineer of the Great Northern lines (Vol. 2, G. N., p. 415) confirms these statements.

Morgan allowed an average of 27.27 cents per cubic yard in the Northern Pacific case for earth, which compared with Complainant's Exhibit 81, Darling (Vol. 10, N. P.), showing an average total cost of 35.3 cents is a sufficient showing of the reason why the Master accepted the complainant's figures.

Item 5—Cross Ties and Switch Ties.

The quantities of ties were not disputed. Morgan fixed a figure of 55.5 cents per tie, which was based upon 1905 prices and did not allow anything for inspection and handling. The Northern Pacific figure was 67.2 cents and the Great Northern figure 70.5 cents.

Hogeland Exhibit 50 (Vol. 6, G. N.), shows actual prices paid for track ties by the Great Northern for the years 1898 to 1907, inclusive, covering the whole system. The table at the foot of the exhibit shows the marked increase for average prices 1905 to 1907, and for the year 1907, as follows:

	Average Cost Per Tie. Cents.
1898-1907	66.6
1905-1907	76.3
1907	82.0

Exhibit 85, Darling (Vol. 10, N. P.), and Exhibit 4, Darling, sheet 5, showing average prices per tie paid from 1906 to 1908 amply support the action of the Master in rejecting the figure of 55.5 cents. In accepting the lower of the two railroad figures, namely 67.2 cents, he unduly reduced the present cost of Great Northern ties as established by its current expenditures.

The testimony of Hogeland, Vol. 4, G. N., p. 1606; 2 G. N., p. 160; Morgan, 3 G. N., p. 1447; Darling, 2 N. P., p. 581, more than supports the Master's conclusions and plainly shows that Morgan neglected the expense of inspection, peeling and handling ties in

fixing his unit prices and the exhibits show that in adopting the obsolete prices of 1905 his price could not be accepted.

Item 6—Ballast.

The main difference in this item was in unit prices. The Master fixed an average price of 62 cents per yard as against Morgan's price of 45 cents per yard. *Complainant's Exhibit 83, Darling (Vol. 10, N. P.)*, is a statement of actual cost of ballasting done by the Northern Pacific, 1906 to 1908, upon 444.32 miles at an average price of 81.69 cents and for the work in Minnesota an average of 83.60 cents.

Morgan testified (Vol. 5, N. P., p. 1939), to the details upon which he based his estimate, and it appears that he omitted any consideration of the necessary cost for transportation of men, contractor's plant, materials or supplies to the place of work, or for expenses of cleaning up the track after the ballast is applied. (See also comparison of the classified items of expense in applying ballast in Complainant's Exhibit 83, Darling, with Morgan's evidence, Vol. 5, N. P., pp. 2095 to 2100, inclusive.)

John B. Berry, Chief Engineer of the Rock Island lines, who appraised the Northern Pacific system after an exhaustive inspection and examination of the records and physical property, testified to an average cost of ballast at 75 cents per cubic yard (Vol. 3, N. P., pp. 892-899.)

In the Great Northern case Hogeland testified (Vol. 2, G. N., p. 24), that the quantities of ballast in his statement were made up from actual records and measurements. Thereafter he prepared Hogeland

Exhibit 6, as corrected, after further examination of records showing actual cost of ballasting lines 1901 to 1908, which exhibit was critically examined in connection with the company records by Engineer Morgan.

One example showing the superficial character of Morgan's examination of lines for determining quantities appears in connection with this item. On the line in Minnesota from Brookston to Ellis, Morgan testified (Vol. 3, G. N., p. 1450), that after his inspection he computed 122,000 yards of ballast in place. After examining the Great Northern records in connection with Hogeland Exhibit 6, he testified (Vol. 3, G. N., p. 1441), that the records showed that there were 320,878 cubic yards of ballast on that line. The purpose of his examination and later testimony was to prove that the average cost per yard, as stated in Hogeland Exhibit 6, was too high because the total cost of ballasting had not been divided by all of the yards applied. Hogeland dealt with the criticism in his testimony (Vol. 4, G. N., p. 1700), showing wherein Morgan's criticism far overshot the mark, but the fact that in his own inspection Morgan only allowed 122,000 yards and later found on the record 320,878 yards characterizes his whole work as superficial and insufficient.

Item 7—Rails.

The difference between the parties on this item was in the unit cost and as stated by the Master arose through the failure of Morgan to allow a sufficient amount for handling and inspection, in addition to the first cost of the rails and the freight charges to

point of delivery. Hogeland fixed his prices (Vol. 2, G. N., p. 26), by taking the actual average prices paid by the Great Northern in 1908 on 60,000 tons of rails delivered at St. Paul and Superior, which was $30.47 per ton, to which was added 28 cents per ton for inspection and handling. He testified at length regarding the details of these purchases (Vol. 2, G. N., p. 116).

Darling testified (Vol. 2, N. P., p. 35), that the actual cost to the Northern Pacific for rails laid down at Duluth or St. Paul had been $29.90, with an additional cost of $1.00 per ton for handling at the docks and yards.

Item 10—Track Laying and Surfacing.

The analysis by the Master of the differences in this item is amply supported by reference to the evidence.

Complainant's Exhibit 84, Darling (Vol. 10, N. P.), shows the actual cost of track laying on the Northern Pacific 1906 to 1908 to have been on the system $1,112.88 per mile, and in Minnesota $758.08 per mile. On the Big Forks & International Falls Railway, a subsidiary line, it was $860.46 per mile. Morgan's testimony (Vol. 5, N. P., p. 1946) analyzing the basis of his figure of $520.32, shows that in this instance again he omitted substantial items of expense, allowing nothing for transportation of men, contractor's supplies, plant and material. He stated the $275.00 per mile was sufficient in his judgment as an average contract price, whereas Darling Exhibit 84 shows the actual amount paid contractors per mile

in Minnesota on the Northern Pacific of $392.15, and an average on the entire system of $541.95.

Morgan's analysis of Darling Exhibit 84 (Vol. 8, N. P., p. 4188) apparently concedes an average cost per mile of $692.91.

Hogeland Exhibit 7 (Vol. 6, G. N.), is a statement from actual records of the Great Northern Company for ten years, 1898 to 1908, and shows an average cost of $851.00 per mile.

In connection with his cross-examination, Hogeland produced certain contracts for track-laying let by the Great Northern Company in 1895 (Vol. 4, G. N., pp. 1716, 1728), showing that in accordance with methods then in use the current contract price for track-laying and surfacing in Minnesota was substantially $400.00 per mile and that by express provision in those contracts the railroad company undertook to furnish free of cost all equipment, transportation of men, materials and supplies, etc., to the contractors. This, as contrasted with Morgan's present allowance of $275.00 per mile for contract price demonstrates the quality of Morgan's work.

Item 11—Bridges, Trestles and Culverts.

The Master allowed to the Complainants on this item two-thirds of the difference between their estimates and those by Morgan, recognizing to some extent figures shown in reports by other railroads than those involved in these cases and as to which the complainants had no opportunity to cross-examine and determine the basis upon which the reports of such other companies had been prepared.

Exhibit 86, Darling (Vol. 10, N. P.), shows actual current cost of various kinds of bridges, trestles and culverts and justified the Master in increasing the figures allowed by the State.

In the Great Northern case it appeared that Morgan in his inspection (Vol. 4, G. N., p. 1609) had totally overlooked 13 railway bridges which had been constructed and were in place when he made his inspection and that between the date upon which he closed his figures and June 30, 1908, the Great Northern had added 14 additional bridges in the state; that in the case of 14 other bridges Morgan overlooked a large amount of expensive foundation work.

Hogeland testified (Vol. 2, G. N., p. 29), that the prices used by him were based upon actual current cost for the building of all of the kinds of bridges in question during the year 1908.

Items 12 to 28 and 31 to 34.

As heretofore stated and as shown in the Master's report the allowance by the State for these items when taken together exceeds in the case of the Northern Pacific and the Great Northern the amount claimed by the complainants in those cases, but the Master adopted the lower figures of the complainants in reaching his results.

Items Covering Engineering, Superintendence and Legal Expenses.

These necessary expenses in any undertaking of magnitude requiring time to accomplish are covered under Item 30 by Morgan in his schedule (Vol. 9, N. P., Defendant's Exhibit "QQ," Morgan).

Concerning the propriety of an allowance of this kind Morgan said (Vol. 5, N. P., pp. 1851, 2037), that in making up an estimate of the cost of constructing a road, it is customary to allow a percentage of the total cost to pay these expenses. He determined upon 4½ per cent as fairly covering this cost and there was substantial agreement among the witnesses that such a percentage was fair as an average.

Hogeland (Vol. 2, G. N., p. 51), explained that an additional allowance of 1.5 per cent was necessary to cover expenses incurred during construction periods for organization, general officers and accounting officers and other forces not covered under the specific enumeration under Item 30. The Master disallowed the additional percentage claimed and fixed the item at 4½ per cent.

It is obvious that this is an actual item of expense as necessary as an architect's fee in building a house and inheres as actual value in these completed railroads equally with the cost incurred in acquiring the tangible items of physical property.

Contingencies.

Error is assigned to the action of the Master and Court below in recognizing this item as a proper element in the steps taken to determine values in these cases.

Present cost of reproduction is not an exploit of the imagination but is an accurate and comprehensive inventory of the items of physical property and the cost of acquiring and putting them into place and

efficient operation. While it is a theory in the sense that these railroads are not in fact to be reproduced, it is a practical computation of the amount necessary to produce a property equal to that which is being valued. It is one method, among others, of arriving at a view of value because having found the present cost of acquiring and constructing the property, it is then possible to examine the present condition of the property as against depreciation, its power now and in the reasonably near future to produce net income and all proper elements leading to the final determination of fair present value.

The computation of present cost of reproduction is of no value to that end unless it be faithfully made and if actual elements involving cost and consequently value, are omitted the result is not a true answer. If it be universally true that the cost of ballast, ties and rails in place is something more than the first cost of the articles and always involves further cost for the labor to put them in place and as experience shows that there are inevitable uncertainties resulting from elements not under control and unforeseen, that add to the labor cost, then those contingenices are no less actual cost than the price of the article when first bought or the amount agreed to be paid the laborer for his work.

In every estimate of cost of construction, an allowance, ordinarily ten per cent, is made by engineers for contingent expense of this character and the testimony of experienced men proves without dispute that the money thus allowed (and usually more) is always expended. It is, therefore, as much a part of the

value of the article in place as the more definite items of price or first cost per unit.

Engineer Morgan recognized the propriety of an allowance to cover this cost, and while he reduced the allowance to five per cent as against the judgment of other witnesses and proof of actual experience, his reasons may be profitably considered.

He said (Vol. 1, N. P., Complainant's Exhibit N. P., sub-title Contingencies; testimony 5, N. P. pp. 1852, 2041, 2047, 2056, 2116):

> "In preparing estimates for the cost of the construction of a projected line of railway it is customary for engineers to add a percentage to the estimated cost to cover unforseen conditions that develop in the execution of the work.
>
> "The preliminary field-work and surveys upon which these esetimates are based is usually hurriedly made; very little, if any, time is given to considering the character of the material to be encountered in the grading other than a very rough, and necessarily uncertain, classification of it, or of the character and extent of the water courses and drainage areas, and, except for the very important bridges, little information is at command as to the requirements for foundations, etc., so that with these and other factors, representing an indeterminable element of cost, there is every justification for a contingent item, both in theory and in practice.
>
> "Engineers differ as to the percentage to be added to estimates of cost. In many cases they are governed by their own experiences, but the usual amount added for projected lines is ten per cent of the estimated cost. This amount is sometimes ample and in other instances it has proved not nearly sufficient to cover the contingencies met with in the construction of the line.
>
> "The estimates I have prepared of the railroads

of Minnesota are not for projected lines of railway, but for the reproduction of existing railways, in which many of the contingencies met with in the original construction and in the development of the properties during the past thirty years have been made known to me by officers of the respective companies associated with the construction and development of the properties.

"From the careful examination made of the lines and from a study of the original construction profiles, I was enabled to observe the truthfulness of the representations made to me of difficulties encountered and expenditures made in constructing and perfecting the lines, and it was possible to include under their proper headings many things which otherwise would have been unknown and consequently disregarded in the estimate of reproduction cost.

"The character of the material encountered in the grading is exposed to inspection on all parts of the lines; the extent and character of the water courses and of the drainage areas are known, the bridges, trestles and culverts are established to fit these conditions, and the character, quality and quantity of the construction is known from the records of the company and from the examination and computations made of them.

"Considering the detail with which the estimates have been prepared and the inclusion in them of many items of a contingent nature, it does not appear justifiable to consider an estimate of the cost of reproducing a railroad as synonymous with an estimate for constructing a projected line. The essential difference rests in the fact that in reproduction cost the estimate is prepared in the light of known conditions, whereas, for a projected line the contingencies are wholly unknown. These facts have been instrumental in reaching a determination that 5 per cent for contingencies is fair under the circumstances attaching to the work of this appraisal."

In his testimony (Vol. 4, N. P., pp. 2056-7), he conceded that in the physical appraisement of railroads made in Michigan by State Authorities, an allowance of 10 per cent had been made to cover this item. (See Bulletin 21, Commercial Valuation of Railway Operating Property in United States, 1904; Department of Commerce and Labor, Bureau of the Census.)

Witnesses for complainants conceded the force of Morgan's argument that a fair statement of present cost of reproduction would require full benefit to be taken of all hitherto uncertain conditions affecting foundation of grades and structures that have now been explored and made more certain and capable of accurate computation, but maintained that the weight of current experience demonstrates that the percentage claimed would at least be necessary to cover those contingencies which inhere in casualties, strikes, stress of weather, and matters of such casual character, which cannot be measured or predicted by any past experience. A large amount of testimony was taken on this subject; the solution of the question is a matter of opinion and judgment guided by such evidence as the record contains, showing actual results, and it may be fairly asserted that not only was the better weight of the expert opinion on the side of the Complainants on this subject, but also that the state of the proof supported these opinions from actual experience.

Great Northern Exhibit 56, Hogeland (Vol. 6, G. N.) is a statement showing actual cost of work done under authorities for expenditure during the years 1903 to 1907, inclusive, as compared

with the estimated cost of such work for each year. Hogeland testified (Vol. 4, G. N., p. 1622) that these authorities covered all sorts and conditions of work, not only new work upon new ground, but also replacement or renewal work upon ground that has already been investigated and worked over or built upon, and concerning which there exists both in the records and the knowledge of the engineering officer the same character of information which Morgan asserted justified his reduction of this percentage from 10 to 5 per cent. Hogeland testified that these estimates for expenditures were made as closely as practical by the engineer in charge of the district affected, and in such detail so as to arrive as near as possible at a correct result; that everything done on the road each year, excepting the construction of new lines is thus covered, but that authority for the construction of new lines is authorized by the Board of Directors. This exhibit, therefore, shows that the allowance of 10 per cent claimed even under the circumstances surrounding cost of reproduction, is not excessive. The total estimated cost for the five years shown in this exhibit exceeds $25,000,000.00 and the total actual cost exceeded $29,000,000.00. In each of the years the actual cost exceeded the estimated cost more than 10 per cent, and with the exception of 1905 and 1907 the percentage was in excess of 15 per cent; the average increased percentage for the five years in question was 15.75 per cent. Testimony of experienced witnesses, who had taken into consideration the elements contended for by Morgan, shows that the extra cost over and above the original esti-

mate, with rare exceptions, outruns 10 per cent, and frequently greatly exceeds it.

Jas. J. Hill testified (Vol. 3, G. N., p. 1254) that the experience on the Great Northern has been that the actual cost as a rule exceeds 10 per cent, and that he could not recall a single case where it had cost less. He testified that the custom had been during his experience to call it 10 per cent, but that this amount did not cover the excess. Hogeland (Vol. 2, G. N., p. 41), analyzed the basis upon which he computed this item, showing that it was based in his judgment upon the increased cost of the work due to all unforeseen causes, such as fires, floods, tornadoes, accidents, strikes, etc., and that it was also calculated to cover unclassified items that might have been unforeseen or overlooked. He stated that his experience has shown that 10 per cent is not sufficient starting out with a new piece of work, and that practically, in every instance, the original estimate is over-run where 10 per cent had been used for contingencies; that in a number of instances in the past 10 years the amount has been placed at 15 per cent, and this has practically always been over-run. He recognized the force of a difference between an estimate for new work and for cost of reproduction, because some of the elements of uncertainty have been probed into and found out, such as bridge foundations, tunnels, etc., but he made it plain that in every other element the additional cost would be just as great in the problem of reproduction as in the original construction of the road and summing up all these considerations, he expressed the opinion that 10 per cent on the items into which

labor largely enters is a fair and conservative charge for contingencies.

To the same effect testimony of John F. Stevens (2, G. N., p. 445); John B. Berry (Vol. 3, N. P. p. 739); Wm. L. Darling (2, N. P., p. 12).

For reasons heretofore stated, there can be no doubt of the correctness of including an allowance of this character in stating present cost of reproduction. Inasmuch as the Master adopted the percentage conceded by the State Engineer i. e., 5 per cent, there can be no claim of error in that regard.

Interest During Construction.

There was similar agreement between the witnesses in the necessity of an allowance to cover the interest that would accrue upon the necessary money expended for right-of-way, labor and materials during the period of construction.

In overruling the exception to this allowance, the lower Court said (Opinion, Vol. 1, N. P., 424):

> "Exceptions were taken to the allowance of interest at 4 per cent. per annum on the cost of the reproduction of the railroad properties during one-half of the estimated times of their construction. But the evidence is conclusive that moneys invested for the purchase of rights of way for, and in the construction of, railroads, ordinarily produce no net income during the period of construction, that the amount of capital thus losing returns is ordinarily equal to one-half of the cost of reproduction during the entire period of construction, or to the entire cost during one-half of that period. There is no doubt that interest at a fair rate on the capital invested in materials and labor that remain idle during construction is as much a part of the

cost of constructing or reproducing a railroad as is the money paid for those materials or that labor. *Brunswick Water District v. Maine Water Company*, 99 Me. 371, 59 Atl. 537, 542. Mr. Morgan, the engineer and witness for the defendants, allowed in his report to the Commission, and verifies the justice of an allowance, of 4 per cent. per annum during one-half of the period of construction; but the amounts he allowed were less than those found by the master, because his estimates of the cost of reproduction and of the times requisite for construction were less. The weight of the testimony on this subject, however, sustains larger amounts than those fixed by Mr. Morgan or the master, and there was no error against the defendants in the latter's finding and allowance of the item here under consideration in either of the cases in hand."

Morgan in his report (Vol. 10, N. P., Complainant's Exhibit Morgan, N. P.) said:

"The rate of interest as established is applied to the total estimated cost of reproduction assuming that the necessary funds would be fully employed one-half of the estimated time required to build the respective lines, which according to their mileage varied from one to eight years."

He testified regarding this item—(Vol. 5. N. P.. 1857, 2047).

It is apparent that the actual construction of these lines did in fact require many years.

Complainant's Exhibit 65, Drew (6, G. N.) shows the rate of progress of the Great Northern system beginning with 1880, when the St. Paul, Minneapolis & Manitoba Co. began operations with 656 miles. The cost of actual construction is not fairly stated

unless the interest that accrues upon money expended during construction is charged to cost of property. Until the property is ready for operation interest upon the cost is a part of the capital investment. It is so prescribed and required by the Interstate Commerce Commission in its Classification of Expenditures for Road and Equipment adopted under the provisions of section 20 of the Amended Act to Regulate Commerce. (See Item 47, "Interest and Commissions" in Classification, 1907, officially published by the Interstate Commerce Commission.)

So also it is plain that a statement of present Cost of Construction would require an allowance for the value in the property reflected by interest on money expended during construction.

In *Water District vs. Water Company*, 99 Me. 371, the question of interest during construction in the making up of an estimate of this kind was considered, and the Court said:

> "And a fair rate, usually the prevailing rate of interest upon the money invested in the plant during construction and before completion is as much a part of the cost of construction as is the money itself which is expended for materials and labor."

It is apparent that the reproduction of these lines would require an extended period of time and in the Great Northern case there was agreement that 8 years would be necessary for that purpose (Hogeland, 2 G. N., 52; Morgan, 3 G. N., 1467). In the Northern Pacific case, the state conceded four years (5 N. P., p. 1857), and the Master adopted these periods in his findings (1 N. P., 232). The differences between the state and complainants in the Minne-

apolis & St. Louis case were compromised (3 M. & St. L., p. 928) and the agreed percentage adopted by the Master.

The action of the Master in adopting a rate of 4 per cent per annum as a proper charge for interest on money used during construction, while in fact it accorded with testimony offered by witnesses for certain complainants, was opposed to the better weight of the testimony and the express claim of complainants in the Great Northern Case. It is apparent that the question of a proper rate of interest, while a matter of judgment, is not an engineering question but one to be determined by witnesses having a knowledge and experience in procuring railroad capital. Witnesses of that character all supported a higher rate than 4 per cent and the lower Court having examined the evidence, was led to say that "the weight of the testimony on the subject, however, sustains larger amounts than those fixed by Mr. Morgan or the Master, etc."

No Net Earnings from Commercial Business During Construction.

Morgan testified (5 N. P., page 1857), that he allowed 4% for each of the roads in Minnesota. It appears further from his testimony that one of the main reasons for adopting 4% was his belief that during the period of construction there would be substantial net returns from commercial business, which would go toward reduction of interest charges. The record contains abundant testimony from expert witnesses and also testimony regarding specific instances

all to the effect that during the period of construction the movement of commercial business ordinarily returns no net profit.

Jas. J. Hill testified (3 G. N., page 1257), that ordinarily there is no benefit derived from doing commercial business during the construction period. He stated that conditions can be imagined under which there would be some benefit, but as a matter of fact, in ordinary practice, railroads would rather not be bothered with the business and would rather not have it to do until the road is reasonably ready to handle traffic.

It is apparent that it is the universal belief of men of experience that the interference with construction or revision work, resulting from the movement of traffic in the handling of commercial business, greatly increases both the cost of construction work and the cost of moving the traffic. Mr. Hill illustrated the results of commercial business during the construction period by reference to the extension of the Great Northern lines to the coast, 800 miles; construction was started in the fall of 1890, track connected in January, 1893, and the first tariff in effect in May, 1893, but that it was five years thereafter, or 1898, before that line, 800 miles long with an old prosperous system to the east of it, earned any net money above operating expenses and taxes. He concluded his analysis of this question by stating that in portions of the lines, such as branch lines which would be completed, there would be probability of some profit where the operation was proceeding after all construction had been completed, but dealing with the question as a

whole, all such instances would be more than offset by losses on other portions of the lines.

John F. Stevens (2 G. N., page 449) testified that the handling of commercial business while construction is in progress makes it very much more expensive for both classes of work. The reasons for this were explained by the conditions of the track and facilities for economical operation; the track is poor, water service, coaling chutes, and all facilities are in an imperfect and undeveloped condition; construction trains are being moved in opposition to commercial trains; terminal facilities are incomplete and every element tends toward greater expense, in view of the conflict and confusion of the two classes of business.

John B. Berry (3 N. P., page 745) and Howard Elliott (4 N. P., page 1255) confirmed these views.

For the State, Mr. Morgan recognized, while under cross-examination, the existence of these conditions. He testified (5 N. P., page 2062) that during the period of construction transportation for the public is done under disadvantages and that it would and does enhance the cost of hauling commercial business; in the same way the hauling for the public enhances the cost of construction work.

It is the sum of all opinion, therefore, that in a problem of this character, there can be no credit allowed upon interest during construction from commercial earnings, and, therefore, there was in fact no basis for an allowance of a rate of interest such as 4%. Witnesses like Hill, Elliott, Stevens, etc., defended the claim for a rate of 6%, by showing the practical impossibility of raising the necessary amount of money upon any lesser rate; these witnesses, ana-

lyzing the conditions indicated that a much larger charge would probably be incurred through the necessary discount upon securities which would have to be suffered. Past and current experience illustrates the truth of their conclusions. (See evidence J. J. Hill, 3 G. N., p. 1267.)

Interest in Terminal Companies.

Error is assigned to the action of the lower Court "in including in the value of the railroad property cost of reproducing the property of other independent corporations in which the Railroad Company held stock." (Assignment 15, Subdivision II, Assignments of Error.)

The exhibits and testimony show that none such were in fact included in the valuations except certain terminal and depot railroad properties owned jointly and used in common at the three large terminals by a number of the different lines in the state.

The language of the lower Court correctly states the facts (Vol. 1, N. P., p. 424):

> "The Minnesota Transfer Railway Company is a corporation and the joint agent of the owners of ten different lines of railway for the interchange of their freight traffic in St. Paul and Minneapolis. Each of the ten owners owns one-tenth of the property of the Transfer Company by virtue of an ownership of stock. The St. Paul Union Depot Company is a like corporation and joint agent of the owners of nine lines of railroad for the exchange of their passenger traffic, and it is owned by nine constituents in the same way. Each of the three defendant companies owns one share in each of these terminal companies, and the latter

corporations and their properties are operated and used as tools of the railroad companies that own them, to conduct transportation for their exclusive use and benefit. The defendants complain because the Master allowed to each of these three companies $1,186,191 as the cost of reproduction and the value of their respective interests in the property of these subsidiary companies, and because he allowed to the Northern Pacific Company $1,180,151 for the cost of reproducing and the value of its interest in a similar corporation and its property used by the Northern Pacific Company for a like purpose at Duluth. It is not claimed that these interests are not worth, or that their cost of reproduction would not be, the amounts allowed; but it is contended that these values are not allowable at all, because they are represented by the stocks and bonds of the subsidiary companies. But these interests in these terminal corporations and their property are the most indispensable parts of the Minnesota properties of the defendant companies used to earn the fares and rates here in question, and any estimate of the value or of the cost of reproduction thereof which omitted the value or the cost of reproduction of these interests would have been incomplete and deceptive. The master rightly considered and allowed their value."

The physical property involved in these terminals is actually used in the public service and in considering the nature of the return afforded by these rates, the value of the terminals of these companies has an equal place with the value of the remaining parts of their systems. If the parent companies owned them directly as tenants in common, there could be no question of their being a part of each system in the proportion of each interest. The fact that corporations intervene as holders of titles and for convenience in

readily adjusting accounts for the joint use and the maintenance of the terminal facilities in no way changes the real fact. The Master found from the evidence (Report Vol. 1, N. P., p. 234):

> "These subsidiary corporations are mere agencies operated for and wholly dependent upon the railroad companies who own the stock and in no sense are they independent enterprises engaged in business on their own account. In the evidence and all the proceedings before the Master it has been by all parties assumed that such was their character, and this being so the properties thereof should be considered as property of the companies to the extent of their respective interests as represented by stock.
>
> These terminal properties, located as they are and used for receiving and discharging passengers and for receiving, handling, transferring and forwarding freight, are of exceptional value and importance and the facilities so provided are found to be fully worth the amount claimed therefor by complainants and such amount has been taken in each of the cases."

See *Southern Pacific Terminal Co. et al. v. Interstate Commerce Commission*, 219 U. S. 433.

As stated by the Master, the cost of using these terminals is included in operating expenses and the dividends, if any, are reported as a part of the revenues of the parent companies. No claim was made for the value of any of the stocks or bonds issued by these companies. Certain other corporate properties were included in the various inventories but upon consideration disallowed by the Master (Report Vol. 1, N. P.,

233) and none were included in his computations except the terminal properties specified above.

Cost of Reproduction of the Northern Pacific and Great Northern Systems.

In order to fully present to the lower Court every reasonable view of the values of these properties the cost of reproduction of these systems was also carefully compiled and shown in evidence.

Testimony of the witnesses, Thomas Cooper (2 N. P., 126 et seq.) Cooper Exhibit 9 (10 N. P), W. L. Darling (2 N. P., 7) Darling Exhibit 2, taken in connection with all the detailed exhibits showing quantities and costs established the system values of the Northern Pacific. These were supplemented and supported by the evidence of John B. Berry, who independently appraised the system, and Howard Elliott, President of that Company.

Similar testimony was offered in the Great Northern case by A. H. Hogeland, Chief Engineer (2 G. N., p. 59, et seq.) Hogeland Exhibit 8 (6 G. N.), Charles Hayden (2 G. N., 173) Hayden Exhibit 9 (6 G. N.), and the numerous cost price and record quantity exhibits already fully discussed. The evidence of James J. Hill and John F. Stevens also bore largely upon the system values.

The Master considered this evidence and duly made findings thereon. He excluded the reproduction cost figures of certain subsidiary companies that are operated separately and made certain percentage reductions in the remaining figures (1 N. P., p. 245). His findings were as follows:

Northern Pacific System.....$452,666,489.00
Great Northern System.....$457,121,469.00

It is therefore seen that the values of these properties have been exhibited by convincing evidence upon every basis that can be reasonably suggested and the necessary factors are contained in these records for such subdivision of values territorially and to various classes of business as may be necessary in the final solution of the problems involved.

Comparison of Values as Shown by Complainants, Ascertained by State Engineer Morgan and as Determined by the Master.

In order to make fair comparison it is necessary to bring the several appraisements to the same basis so that each will cover only the property appraised in the others. In the Northern Pacific case Complainant's values are computed to April 30, 1908. In the Great Northern case they were computed to June 30, 1908. In the Minneapolis & St. Louis case they were computed to June 30, 1907.

In each case Morgan appraised the properties nominally as of June 30, 1907, but actually only the property completed and in service as of December 31, 1906. All property acquired after the date of Morgan's appraisal has been included in the Complainant's exhibits at actual cost and it is necessary, therefore, in order to arrive at a basis of comparison to add the amount of such additional property to Morgan's appraisements, and when that is done, a basis of comparison exists embracing the same properties.

Furthermore, in the case of the Northern Pacific, Exhibit 85, Darling (10 N. P.), shows that he returned

the cost of reproduction of two subsidiary railroad companies independently operated in Minnesota, namely, the Big Fork & International Falls Railway Company and the Minnesota & International Railway Company, each of which were disallowed in toto by the Master. In order to make comparison, therefore, the figures covering these properties have been stricken out in the tables below.

In like manner the Great Northern figures, 2 Hogeland (6 G. N.), included under item 40, "Lines under Construction"—$138,411.00. These the Master disallowed and they were not appraised by Morgan; therefore, this item has been stricken out in the tables below.

With these corrections it is believed that the comparisons shown cover the same items of property in each instance.

Northern Pacific Case.

Complainant's Cost of Reproduction new (Exhibit 85, Darling, 10 N. P.) (with deductions as above)	$ 97,041,718.47
Present Value determined by Master (1 N. P. 236).....	90,204,545.00
Cost of Reproduction new, Morgan's Estimate "A" (with deductions as above) (Defendant's Exhibit "XX," Morgan 9 N. P.).....$	71,079,780.98

Add Expenditures at cost December 31, 1906 to April 30, 1908 (Complainant's Exhibit 85, Darling, 10 N. P.)	5,222,495.53	
Total		$ 76,302,276.51
Difference—		
Morgan less than Master.		$ 13,902,268.49
This difference is distributed between land values and other property items as follows:		
Northern Pacific Lands values by Master (1 N. P. 220)	$ 21,024,562.90	
Valued by Morgan's Estimate "A" (Defendant's Exhibit "XX," Morgan 9 N. P.)	15,385,078.47	
Difference		$ 5,639,484.43
Difference in remaining items arising through insufficient allowance by Morgan for quantities and prices as found in detail by Master (Rep. pp. 225-234: 1 N. P.).....		$ 8,262,784.06
Total difference		$ 13,902,268.49

Great Northern Case.

Complainant's Cost of Reproduction new (Exhibit 2, Hogeland, 6 G. N.) deducting Item 40, "Lines Under Construction"		$157,210,445.00
Present Value determined by Master (1 G. N. 192).....		138,425,291.00
Cost of Reproduction new, Morgan's Estimate "A" (Morgan's Exhibit "C" 5 G. N.)	$113,098,383.72	
Add new work to June 30th, 1908, (Complainant's Exhibit 55, Hogeland, 6, G. N.).....	9,382,084.00	
Total		$122,480,467.72
Difference— Morgan less than Master.		$ 15,944,823.08
This difference is distributed between land values and other property items as follows:		
Great Northern Lands valued by Master (1 G. N. 177)	$ 25,172,650.00	

Valued by Morgan's Estimate "A" (Defendant's Exhibits "C," "D" and "E," Morgan, 5 G. N.) ..	16,656,364.73	
Difference		$ 8,516,285.27
Difference in remaining items arising through insufficient allowance by Morgan for quantities and prices as found in detail by Master (Rep. pp. 181-191 :1 G. N.)		7,428,537.81
Total difference		$ 15,944,823.08

Minneapolis & St. Louis Case.

Complainant's Cost of Reproduction new (Exhibit 28, Cutler, 6 M. & St. L.) .....$	21,845,196.00	
Add interest in terminal properties allowed by Master (Rep., 1 M. & St. L. p. 173)	1,186,191.00	
Additions and Betterments to June 30, 1907 (Complainant's Exhibit 31, Morgan, 6 M. & St. L., Column 2)....	198,471.00	
Complainant's total Cost of Reproduction new.....		$ 23,229,858.00

Present Value determined by Master (1 M. & St. L. 173)..		21,608,464.00
Cost of Reproduction new, Morgan's Estimate "A" (Defendant's Exhibit "K," Morgan, 5 M. & St. L.)		17,393,373.47
Difference— Morgan less than Master.		$ 4,215,090.53
This difference is distributed between land values and other property items as follows:		
Minneapolis & St. Louis lands valued by Master (1 M. & St. L. 173).....$	5,999,397.00	
Valued by Morgan's Estimate "A" (Defendant's Exhibit "K," Morgan, 5 M. & St L).....	3,398,754.84	
Difference		$ 2,600,642.16
Difference in remaining items arising through insufficient allowance by Morgan for quantities and prices as found in detail by Master (Rep. pp. 160-170 1, M. & St. L.)..		1,614,448.37
Total difference		$ 4,215,090.53

Depreciation and Appreciation in Value.

Cost of reproduction new being thus established, there remain certain further considerations affecting value.

Depreciation occurs in certain items of the physical property through stress of weather and effect of time. In great degree it is offset and overcome by current renewals and repairs charged to expense of operation.

Increase in value may be termed appreciation but it is by no means limited to the adaptation and solidification of roadbed and foundations.

It arises in every instance from the connected operation of the property as a whole. An efficient organization is necessary to manage the property and when acquired adds value to it. These various elements of value arise from the use and ability to use all of the separate items of physical property as a single and efficient agency for serving the public. It inheres in the physical property as one of the intangible values in the business as a going concern.

In *Adams Express Co. v. Ohio,* 166 U. S. 185, 219, it was said:

> "Now, whenever separate articles of tangible property are joined together, not simply by a unity of ownership, but in a unity of use, there is not infrequently developed a property, intangible though it may be, which in value exceeds the aggregate of the value of the separate pieces of tangible property."

In *Cleveland, etc., Railway Co. v. Backus,* 154 U. S. 439, 444, it was also said:

"The true value of a line of railroad is something more than an aggregation of the values of separate parts of it, operated separately. It is the aggregate of those values plus that arising from a connected operation of the whole, and each part of the road contributes not merely the value arising from its independent operation, but its mileage proportion of that flowing from a continuous and connected operation of the whole. This is no denial of the mathematical proposition that the whole is equal to the sum of all its parts, because there is a value created by and resulting from the combined operation of all its parts as one continuous line."

In *M. K. & T. Ry. Co. v. Love*, 177 Fed. 493, these elements were recognized:

"There is another matter to be regarded, not specifically mentioned in the above excerpt from the opinion of Mr. Justice Harlan. An established railroad system may be worth more than its original cost and more than the mere cost of its physical reproduction. It has passed the initial period of little or no return to its owners which, of greater or less duration, almost always follows construction and is not infrequently marked by default and bankruptcy. The inevitable errors in its building which finite minds and hands cannot avoid have been measurably corrected, time and effort have produced a commercial adjustment between it and the country it was intended to serve, relations have been established with patrons, and sources of traffic have been opened up and made tributary. In other words, the railroad, unlike one newly constructed, is fully equipped and is doing business as a going concern. It has attained a position after many experiences common to railroad enterprises which entail loss and cost not paid from current earnings and which correspondingly make for value."

A railroad property so operated in a territory where it was constructed and is operated in pursuance to public demand contains elements of increased value that far outweigh minor percentages of depreciation that are not currently met by renewals and repairs.

Sound policy which has been recognized by the Courts and the mandate of the Interstate Commerce Commission (Elliott 4 N. P., 1279; Morgan 5 N. P., 2027), justifies and requires sufficient charges to operating expenses to preserve the integrity of the property against depreciation. It is universally recognized that the income from the business transacted should be sufficient for this purpose, in addition to providing a fair return for the use of the property.

Howard Elliott, President of the Northern Pacific Railway Company, explained the item of Reserve Funds, $9,157,246.36, shown on the Condensed Balance Sheet of the Northern Pacific (Defendant's Exhibit "CC," Gray, 9 N. P.). He stated (4 N. P., p. 1279) that this was a credit balance representing the difference between amounts appropriated and amounts expended since the receivership in 1896, against depreciation.

Complainant's Exhibit 54, Parker (6, G. N.) contains on page 34 thereof the condensed Balance Sheet of the Great Northern for the year ended June 30, 1908. It shows a credit balance of $14,372,447.98 in the fund created through previous years to renew equipment against depreciation.

See also Defendant's Exhibit H-1, Scott (6 M. & St. L.).

It may fairly be presumed that these appropriations fully measure the difference between new items of

property as computed and adopted by the Master in stating Cost of Reproduction new, and all depreciation that may be said to exist in such particular items. No evidence to the contrary was introduced.

Engineer Morgan, however, offered evidence of existing depreciation in certain items and these are shown in his main exhibits ("XX," Morgan, 9 N. P.; "C," Morgan, 6 G. N.; "K," Morgan, 6 M. & St. L.) under the column entitled "Present Value," as follows:

Northern Pacific Case.

Exhibit "XX," Morgan, supra, shows:

Cost of reproduction, new	$73,856,197.23
Present value	65,027,804.62
Difference	$8,828,392.61

Present physical value or percent of physical condition is, therefore, 11.9 per cent less than cost of reproduction new.

Great Northern Case.

Exhibit "C," Morgan, supra, shows:

Cost of reproduction, new	$113,098,383.00
Present value	100,003,296.00
Difference	$13,095,087.00

Present physical value or per cent of physical condition is, therefore, 11.5 per cent less than cost of reproduction new.

Minneapolis & St. Louis Case.

Exhibit "K," Morgan, supra, shows:

Cost of reproduction, new	$17,393,373.47
Present value	15,000,266.74
Difference	$2,393,106.73

Present physical value or per cent of physical condition is, therefore, 13.7 per cent less than cost of reproduction new.

Appellees do not appear to assign error to the action of the lower Court in dealing with this subject. Nevertheless, it seems appropriate in order that the Court may be fully advised, to indicate the state of the record and demonstrate that the subject was adequately considered.

The Master in his report (1, N. P., p. 238, subtitle "Depreciation") found:

> "It is established that the roadbed is constantly increasing in value. It becomes solidified, embankments and slopes of excavations become settled and stable and so the better resist effects of rains and frost. It becomes adjusted to surface drainage and the adjustment is made permanent by concrete structures and rip-rap, and in other ways a roadbed long in use is far more valuable than one newly constructed. On the other hand, everything on and above the roadbed depreciates from wear and weather-stress. The life of a tie is from eight to ten years only. Structures become antiquated, inadequate and more or less dilapidated. Ballast requires renewal, tools and machinery wear out, cars, locomotives and equipment, as time goes on, are worn out or discarded for newer types. A large part of the depreciation, however, is taken care of by constant re-

pairs, renewals, additions and replacements, a sufficient sum being annually set aside and devoted to this purpose, so that this, with application (appreciaton) of roadbed and adaptation to the needs of the country and of the public served, together with working capital hereinafter mentioned fully offsets all depreciation and renders the physical properties of the road, not less valuable than their cost of reproduction new. This conclusion is fully supported by the evidence and also justifies the language hereinbefore cited from the Missouri, Kansas & Texas Railway case decided by Mr. Justice Hook. (177 Fed., 493.)

There is another element which may properly be considered in connection with the question of depreciation and as an offset to it. It is necessary that the companies should have on call a large sum of money for the conduct of the business and to meet emergencies. No doubt a large part of it draws a low rate of interest while on deposit in bank, but it must be that very considerable amounts are idle and unproductive and must be considered as an element of value in the matter of rate-making."

The lower Court, taking into consideration the contention made by defendants below, that there was error in the allowance by the Master of the sums set opposite Engineer Morgan's item of Adaptation and Solidification, and considering it in its relation to the question of depreciation said (1, N. P., p 425):

"There are exceptions because the Master allowed to the Northern Pacific Company $1,613,612.76, to the Great Northern Company $3,219,642, and to the Minneapolis & St. Louis Railroad Company $608,896.43, for the solidification and adaptation of their respective railroads, and deducted nothing from the cost of reproduction for

depreciation. But these amounts are those allowed by the defendants' engineer and witness Morgan in his original estimates of the cost of reproduction which he reported to the Commission, and there is much other evidence in the record to sustain them. It is clear that a new railroad may appreciate or depreciate as it grows older. It may be renewed, repaired, and improved day by day and year by year as it is operated, until its embankments become more solid, its culverts and bridges firmer and more reliable, its ties and rails more steadfast and secure, and its rolling stock more seasoned and better adapted to its service and to the railroad it traverses, and until the whole property becomes more valuable than it was when it was first constructed. On the other hand, its embankments and its roadbed may be neglected and permitted to deteriorate by the action of rain, snow, and frosts, its ties may be allowed to become partially decayed, its bolts and rails loose, and its rolling stock worn, without adequate repairs, until the entire property suffers great depreciation. Whether at a given time a railroad property is more or less valuable than it would be if it had just been constructed is a question of fact, that in a suit of this nature must be answered by the evidence. That evidence in this case is that the railroads, rolling stock, and appurtenances which constitute the great transportation machines of these companies in Minnesota are in better condition for use, more efficient, more steadfast, better adapted to each other, than if their construction was just completed, that all depreciation has been offset by appreciation, and that values to the amounts here allowed by the Master have been added to the values of these properties new, by their age, their repairs, their renewals, their adaptation, and the assured efficiency that comes from constant careful maintenance and operation. There was no error in these allowances."

Note.

Appellants in Brief (page 209) now complain of the method adopted by the lower court in dealing with the subject of depreciation. They do not deny that the existence of depreciation in certain items of property was fully recognized and testified to, nor say that the Master failed to take it into consideration in making his findings. Their only complaint is that no specific finding was made in figures, of the amount of depreciation.

The record is very plain that State Engineer Morgan made specific findings in detail of depreciation, aggregating as above shown, 11.9 per cent of cost of reproduction new, in the Northern Pacific case, 11.5 per cent in the Great Northern case and 13.7 per cent in the Minneapolis & St. Louis case. It will be noticed that his testimony was given in the Northern Pacific case on December 23rd, 1908, and following days, long before complainants rested their case before the Master. His tables showed the results above referred to. No contention was made by complainants over the correctness of his conclusions relating to "per cent condition" of the different items so treated. As to these there was no evidence in opposition, but the problem before the Master was to find fair present value and complainants did vigorously contend that, granting the existence of such depreciation, the problem was not solved without also considering appreciation in value. Many witnesses as hereinafter shown, dealt at length with the subject—depreciation was conceded in places and recognized, but increase in value through elements relating to physical condition

as a matured and efficient operating property—not franchise value nor good will in a commercial sense —was also dealt with. Mr. Elliott (4 N. P. 1257) gave in detail his reasons for concluding that the Northern Pacific system was worth at least fifteen per cent more in its present condition, as an efficient instrumentality for transportation, than one newly constructed of the same kind. Other witnesses also stated their reasons for holding that depreciation was more than offset by appreciation. There was therefore no failure of proof or of findings upon this subject. There was specific evidence, not controverted, that bare physical condition of certain items, approximated the percentages above shown by Morgan. There was much evidence from other witnesses recognizing these facts and all of this was duly weighed by the Master in considering whether fair present value upon this record as to these properties, should be stated or found to be less than present cost of reproduction new. This finding was made upon the weight of the evidence which was undeniably with the position taken by the complainants, and it is not to be forgotten that Morgan was in substantial agreement with complainant's position (see quotation infra, from his report, Complainants' Exhibit, Morgan, N. P.). The Master found that "This conclusion was fully supported *by the evidence.*" Under these circumstances there can be no serious claim made that there was any failure in adequately dealing with the subject. If the Master's findings were not in sufficient detail for appellants' purposes, it was competent for them to have moved below for further findings. Such a motion was made as to certain other matters (1 N. P. p. 318) but no

request was made as to this subject, nor is there assignment of error in this court regarding it.

It is obviously true that this is, in the first instance, a question of fact as stated by the Court below and the facts as shown to the Master may be fairly indicated by the following references.

Notwithstanding the fact, as heretofore shown by references to the Annual Reports of the defendant Railroad and Warehouse Commissioners of Minnesota to the Legislature, and the testimony of Charles F. Staples, one of the Commissioners (6 N. P., p. 2739), that the Commission undertook to ascertain the value of these railroad properties and adopted the cost of reproduction as "the strongest kind of evidence of the fair value of the property," it is plain from the record that excepting the meager recognition of enhanced value in Morgan's item of "Adaptation and Solidification," no effort was made to state the full value of the properties. Morgan apparently limited his consideration of the subject to mere physical value; nevertheless, he recognized the existence of additional values and the axiom that cost and value are not synonymous.

Thus he said (Complainant's Exhibit Morgan, N. P, sub-title "Present Value of Physical Properties"):

> "The opinion is entertained by some that there is no depreciation in the physical properties of a railway, but that as a working tool, its efficiency as maintained, is at all times the equivalent of the new and that a specific facility is in some instances worth less than its reproduction cost, only because in the progress of time and development it has become inadequate for the purposes required of it; and again it is expressed that an

old road through thorough maintenance and for other numerous and good reasons, is more serviceable and valuable than a new road.

"It is entirely tenable that the value of an economically constructed, judiciously financed and efficiently managed railway property, or the contra thereof, is not measured by its cost, and, for the instant, it seems necessary to recur to the elementary that cost and value are not synonymous and that the determination of the present value of the physical properties, using reproduction cost as a basis, bears no relation to the value in the sense of utility, or as an investment."

He testified (Vol. 5, N. P., p. 2026) that his values as stated under the caption in his exhibits "Present Value" were not intended to indicate value of the different items enumerated on the basis of utility as instruments for transportation, and conceded that so far as efficiency, as an operating tool, is concerned, it exists equally in the case of an item or article that is not new as in that of one presently acquired or constructed.

As indicated in the opinion of the lower Court, the complainants dealt with the subject of depreciation in its relation to the added value arising from the forces above referred to. There was ample proof that all minor depreciation, of which the percentages shown by Engineer Morgan above referred to may indicate the approximate facts looked at narrowly and without reference to other considerations, was more than overcome by the increase in value from other sources, even if not adequately offset by proper maintenance.

Jas. J. Hill testified (3 G. N., p. 1297) as follows:

"Q. Mr. Hill, last night when the adjournment was taken, you were discussing some of the elements of value in what might be called a going concern, such as the Great Northern railroad. Perhaps you had not concluded all you had to say upon that subject. For instance, is it a matter of time to build up an organization to run a railroad of this kind?

A. It is. A large system of railway is a matter of slow growth, and its business is a matter of growth as the conditions develop, and conditions change very often. It is a matter of very slow growth and of very close attention. I don't know any business that is conducted with more industry and patience than the railroad business. Everything that can be done to develop business and increase it is done, and in that way it is built up. The railroads even go so far, and have gone so far, as to try and build up the country to increase business.

Q. Well, what have you to say about the working force, the organization, from the top to the bottom of the organization of the company? Is it a matter of time and difficulty to build up an efficient organization of men to conduct the business of the company in a way to get the best results?

A. You might say that the methods in vogue twenty years ago would bankrupt a railroad under the present conditions. I often recall the last interview I had with Mr. S. S. Merrill. After he had a stroke of paralysis and recovered he came up to see me. He was not doing active business. I had known him many years (I think it is about twenty years ago, maybe nineteen), and he said, 'I am older than you are; don't ever let anybody make you believe that the cost of moving freight will be below a cent a ton mile, for it never will. Don't ever let anybody persuade you to run a car with the capacity of over 24,000 pounds.' Now, we were in the habit of

looking up to Mr. Merrill, and his general reputation in the country was that of a very successful and very able railroad man. But if he came back today holding those views and was but forty years old, he wouldn't be worth $3,000 a year to any railroad in America. That is absolutely true. We have had to educate our young men. As we have educated them on the Great Northern they have taken them away from us very rapidly; we have, I think, furnished presidents and vice-presidents to fourteen railroads in the country. It is a matter of very close study and hard work.

Q. Do you consider an organization of that kind an element of value in a railroad property?

A. Why, it is an element of value which can only be fairly measured by the results, and it really establishes the value of your property, because the value of a railroad is what it can earn; or, a better statement might be, what it can *save* out of what it earns.

Q. Is there an element of good-will, Mr. Hill, in connection with the business of a railroad company that has had a considerable history of successful management, which may be considered in this connection?

A. Well, maybe "good-will" would describe it, but I should think it would be the tendency of business, the trend of business towards the railway that is built up by it that is of very great value. The good-will of a corner grocery would be, I suppose, the facilities and reputation and business that came to it but a railway is much more complicated and covers a broader field. People get in the habit of using a railway and they are very apt to continue that habit.

Q. Do you consider that there is that element of value in the Great Northern property?

A. Yes sir; and I think it is very great.

Q. Now taking all of these considerations into mind for a moment would you say that these additional elements which you have referred to

add value to a property over and above the mere physical inventory-value of the physical parts of that property?

A. Certainly they would. If they didn't believe that why should everybody connected with it be constantly straining every nerve to bring about this result?

Q. And that might be said in a rough way, to mark the difference between a railroad that has had a history of success as a successful carrier and one that is entirely new, unknown and untried by the public?

A. All that work of building up would have to be commenced and carried on for a new road.

Q. Now, just one question on an item that is in this exhibit of Mr. Hogeland's: $3,240,178 is comprised in the present value of stores and supplies on hand in the state of Minnesota; from your knowledge and experience, can you say whether there is a reasonable necessity for keeping on hand such an amount of supplies and stores for the lines in this state?

A. That amount is rather under, I think, than equal to the average. We endeavor to keep the supplies and stock of material on hand as low as we can, because money invested in that is not drawing any income, so we keep it down to the actual necessities as nearly as we can. I think that that is a low figure.

Q. Now, I would like to direct your attention for a few minutes to the subject of depreciation. Are there certain portions of the physical property of a railroad that depreciate from use and the effect of weather and time?

A. Well, use and the effect of weather and time would apply to everything. Some portions are affected by the weather and by time, and not so much by use. Take ties, for instance; ties rot in time, and the embankments upon which they are placed will wash away in time by the effect of the weather; and the locomotive and

the cars and other articles that are in use will wear out under use; so it seems to cover the whole situation.

Q. Well, how is this depreciation taken care of, in practice, on the railroad?

A. Why, it has to be replaced or renewed.

Q. With this replacement and renewal, going on as it does, from time to time what is the difference in value as an operating instrumentality of a box-car or a locomotive or a station building, that is properly maintained and renewed as necessity may require, as compared with an entirely new article of that sort?

A. Well, you take an entirely new locomotive, the first thing you have to do with it is (using a common phrase) to limber it up. It has got to be used awhile before you put it into steady service. You have got to find out what defects are in it; very often it develops leaky tubes or a leaky boiler—we have had to replace boilers. After a locomotive has been in use, if you like, six months take one that would cost sixteen or eighteen thousand dollars, it is a second-hand locomotive; if you were going to sell it, it might bring twelve or fourteen thousand dollars, it would not bring the price of a new one, but for actual use, it has been tried and is better than an untried one. Now, cars, it is hard to say; experience has been such in the changes in capacity of cars that a great many that have been sold say, "knocked down," have been put out of service on account of their small capacity. An old 28-foot car would weigh from 20,000 to 22,000 pounds, built of lighter material, in ordinary use in switching in a yard would not stand the shock that a modern car would stand. When there was less to do in the yards and less switching, it used to be that a brakeman would ride the car and set the brake as it was coming into contact with another car. It is a very rare occasion now to see a brakeman riding a car; they

do what they call 'give 'em a kick' and you will see it strike the other car. They have got to be made very strong. They are in a hurry. They are improving terminal yards, they have now what they call 'gravity yards' where they run cars up a steep grade and drop them by gravity, and there are a lot of men that ride the cars and then they are trying to establish some way to get those men back to the hump where the cars are started, trying to get some kind of an automobile that will bring them back faster than they walk, because they often have to go a quarter or a third of a mile. The whole conduct of the business has changed so that many cars are put out of use, not because they are worn out, but because they became unprofitable or antiquated in form. Powerful engines are required; the old draft-rigging wouldn't hold a train together; it would hold fourteen or fifteen or twenty cars, but it wouldn't hold fifty cars, and accidents occurred by breaking in two.

Q. But a car or locomotive that still answers the present day requirements and is properly maintained, isn't any less efficient or valuable, as an operating instrumentality than an entirely new one of the same type?

A. Well, what you call a new car or a new engine is one that comes from the manufacturer. A great many of the cars are destroyed. We put a new car in its place, to take that number, to keep the numbers full. Well, for instance, if we took car No. 2000 (the even numbers are boxcars), a man would know that 2000 was a boxcar, but he wouldn't know whether that car was built six months or fifteen years ago until he had seen it. The car is kept up (we try to through a policy of 'a stitch in time,') and the repairs of the car are kept up so as to keep it in good order. If anything is the matter with the wheels, they are removed; if anything is the matter with the running gear, it is removed; if the axles

are not heavy enough, there are heavy ones put in heavy wheels or new wheels; the boxes may have to be changed on account of the size of the axle; the boxes won't deteriorate (that piece of castiron), nor will the arch-bars on the side, but the wooden portion of the car does; and if it is the roof, it has to be repaired and kept tight; to do that takes new material; if the siding of the car is not in good order and does not keep the contents safe and dry, it has to be repaired so that it will, and that is done with new material. We have shops where that work is done constantly, and a large force of men doing it.

Q. What can you say as to the general condition—

A. I was going to say that that car does the same work that a car of the same capacity does that might have come from the shops yesterday.

Q. And therefore, as an operating instrumentality, it is equally efficient, equally valuable with a car which came from the shop yesterday?

A. It earns the same in money and takes the same place. Now, take a station, or a shop: our shop building, for anything I see (except the other day I was by and noticed that the metal portion of the roof had to be painted in places that had blistered), is as good as the day we moved in. But we are constantly making additions, putting in new machines (human ingenuity is developing a newer and better machine, that will do more work), and we are taking out an old machine and putting in a new one, taking out a machine with less capacity and putting in one with greater capacity. So with the shops. While they are older in point of time, they are more effective and they cost more money as the years go by. I think our appropriation this year for new tools, (and it wasn't as large

as the officers of the operating department wanted) was over $100.000.

Q. Now, will you consider for a minute if there are any portions of the property that increase in value during lapse of time or what might be called appreciate?

A. Well, when I go back thirty years, I think the whole property has appreciated very materially. We haven't the same shops or buildings or road, or anything else.

Q. Considering perhaps the physical element in the right-of-way (the roadbed, rather), would you consider that the roadbed during the lapse of time and the working of the forces of nature, has become more valuable?

A. Very much; it is more solid and more compacted, and the shrinkage is less. We try to get sod where the roadbed is wide enough, try to get sod grass; we have tried various kinds of grass to cover it, and to prevent the wash of the rains. The same thing, we have tried to prevent the wash of the slopes in the cuts. We used sweet-clover at one time, for it has a long root, and it held very well, but I think that they made a regulation either local or state, that it was a noxious weed and we had to cut it out. In France they use the poppy, because it has a long root that runs into the ground. In moist places willow is very good, (willow cuttings,) and they preserve the bank because the roots hold the bank together. But sometimes, on a high bank, in a wet spring, before the frost has gone out of the embankment, the outside two or three feet sometimes used to slough right off and slide down. The engineers used to make the slope 1½ to 1; of late years we are building 1¾ to 1; that is, 1¾ horizontal to 1 vertical. The angle of repose was supposed to be 1½, but the repose wasn't very perfect.

Q. Would you consider that the value gained through appreciation would offset more or less what value might be lost through depreciation?

A. Oh, the value of a permanent roadway is very great; it is hard to estimate it. When we go back twenty-five years, when we were paying much lower wages than we are, it cost us a cent and a quarter, or a cent and three mills a ton a mile to move the business, and we find that we are now receiving from the public three-quarters of a cent or a little more on an average. The difference, (bearing in mind the increased cost of wages, which I have estimated at about forty-seven per cent,) that reduction of cost, is due to better methods and to a better and more permanent railroad. The rates of freight in the United States are a matter of wonder to railroad men from other countries. A great many have come to our office, we have had them from Australia, the minister in charge of railways in India, a delegation from the German government railroads; from Great Britain, (Mr. Lawrence, a managing director of the largest railroad there, the London & Northwestern, has been here twice, I think), and the wonder to them is how we can pay the scale of wages we are paying and make the rates we do to the public. Well, if you are constantly repairing a poor road, if your embankment is indifferent and there is soft material and your road is poor, you can spend a lot of money. You have got to get it as permanent as possible, so our rule has been to try and do everything that we do of a permanent nature so that it will never have to be done again. We are not very successful in overcoming that word "never" but we aim at that.

Q. Well, then, considering all of these elements of depreciation and appreciation, would you say it was a fair statement that the Great Northern property, in view of the length of time that has elapsed since it was constructed, is more

valuable, as an operating machine, as it stands today, than an entirely new system presently constructed?

A. Very much more valuable as it stands today; there isn't any question or room for any doubt about it. Anybody who knows anything about it would certainly come to that conclusion; there isn't any other conclusion he could come to, if he was in his right mind."

John F. Stevens (2 G. N., 504, 512, 517, 550), criticized the use of inventory method of determining values of railway properties because it omits numerous elements of value that are inherent in every successful railway property.

Note.

Appellants in brief, p. 233, quote testimony of John F. Stevens, witness in the Great Northern case, criticizing the Cost of Reproduction as a basis of ascertaining value.

In order to understand the basis for this criticism, further testimony of this witness should be read.

Thus he testified (2 G. N. p. 504):

"Well, I think you probably misunderstand me or my opinion, at least, of the value of the reproducement cost as expressed in these figures or any figures. I ventured the suggestion and the opinion—my opinion was that such figures were valueless as representing the value of a railway, and I still think so; because (if you want me to tell why) that they do not go far enough. They only cover certain elements of the cost of a railway or the value of a railway. They omit many of the

most important elements entering into the value of a railway. Therefore, accepting an inventory (which is a better term to my mind than replacement estimate) accepting those figures leads you to a fallacy, because it is based on a fallacy; you are not getting all the elements that enter into the value of a railway property, whether it is the Great Northern or any other. There are other elements that you omit (that we omit or somebody omits) that enhance the value of a railway that are not mentioned, and are not taken into account at all."

Howard Elliott recognized the forces bringing about depreciation in certain items and under certain conditions; he also analyzed the forces making for increase in value as follows (4, N. P., 1250):

"In our country it is fair to say, growing as it is, with a population flowing in as it is, that in the main all of your lands, your right-of-way and your terminals, appreciate. There may be a a few places where lands and right-of-way depreciate because mining camps fail and the whole community disappears; but in the main, all of your real estate appreciates pretty steadily. The embankments of a railroad, in my judgment, appreciate as time goes on, because they become better settled and they become better protected from damage from the weather. One of the great difficulties with any railroad is the study of the action of the water, not only of the water in the streams, but the general action of the water when rain falls all over the country; and that is something that we have to be at work at all the time, to adjust the small and the large openings in our embankments to take care of the flow of water. It changes more or less and as we get older and older we finally get it worked out

so that the lateral wash on our embankments is reduced to a minimum; we put in more small openings, or we put in rip-rap and protect ourselves. The older your road gets the more permanent it becomes as to features of that kind. You take a new railroad, it naturally doesn't know about those things, so it puts in what are called wooden box-culverts, we will say, to take care of the drainage of a small stream, a small watercourse. After it has been there for four or five years it finds what the aggregate of the flow is, and it is safe in putting in a concrete structure, a permanent one. On a road like the Northern Pacific, we have spent a great deal of money putting in that sort of thing, making it safer for the embankment above the culvert because it is a concrete box or a steel eye-beam instead of a wooden box or a wooden bridge. Then this question of rip-rap to protect the side-wash, we only learned that by studying the country, and you can't cure it permanently but you find out every year more and more, and your embankment gets more solid and more protected and less liable to be damaged by the rainfalls that come. You take the big cuts, the same thing might be said about those; if you get those sloped properly and protected against snow, have drainage at the foot of the cut, drainage at the top of the cut, very often, to keep the water off, then, as your railroad gets older and more settled you get more and more ballast in, it is ballasted and reballasted, gets more settled and more smooth, and you diminish the chances of derailment and of the interruption which such derailment causes. You can't measure what the cost to you is if you have a freight train derailed, and it ties up all your business for ten hours, but you know it is something. If you can avoid it, it is a good thing. With a road like the Northern Pacific, the tying up of our road for twenty-four hours means a very large expense. With any big road

it would. The depreciation of the metal structure is a very doubtful thing. The Northern Pacific built a bridge over the Missouri river in 1883 (that is now twenty-five years ago); we took that bridge down in 1904. We didn't take it down because the metal was poor, but simply because of the weight of the locomotives we wanted to use in order to haul bigger trains, the weight of those locomotives was too great for that bridge. We took the metal within that bridge, we took it out to the Columbia river, shortened up the length of the span, reinforced the floor system in the lower cord, and it is a part of our main line bridge over the Columbia river, and, so far as we know, it will last another twenty-five or fifty years, there is no apparent depreciation of the metal. It simply wasn't figured right for the heavier locomotives that we are using and the length of span then over the Missouri river, but by shortening it up, putting in a stronger floor system, why it is good for an indefinite period. You take these concrete structures, that are so much used by railroads now, (reinforced concrete) why, no one can say that there is any depreciation in those. Nobody knows how long they will last. Now, the ties and the rails and the ballast on a railroad, of course, wear out, but in a well organized railroad the wear of your ties, rails and ballast is taken care of each year by the renewals of those items.

Q. As an operating expense?

A. That is charged to operating expenses. There is a class of buildings, of course, that do depreciate; take wooden structures, water tanks, etc. You might say that the new material in a wooden building twenty years old is not worth as much as it was when it was new. It is true you could not tear it down and sell it to somebody and get your money back, but, as a tool of commerce, it is just as good for us as it was when it was first up, because it has been painted and

repaired and patched up and kept in order. In the Yakima valley we have just the same station structures at some of our stations that we had when the road was put through there in 1886. The only trouble we have is that they are too small, we have got to throw some of them away because they are too small. They have not depreciated, as a tool for doing business, at all, in good order, they have been kept up. The same thing is true in the Yellowstone valley, we have the same structures there that we had twenty years ago. A good many here in Minnesota. Naturally, as we find the towns grow and we need a better structure, we in common with citizens generally are apt to put up a better type or put up a stone or brick structure, very often, where ten years ago we put up a wooden one, but the depreciation of those wooden structures is taken care of in the same way it is on ties and rail and ballast by constant repairs and renewals, that go on every day and every week and every month, kept in good order. Take a wooden bridge; we very rarely renew a wooden bridge now. We put in a concrete structure or steel eye-beam, or a concrete arch, or we put in a steel girder or truss. In that case, we charge to operating expenses the entire cost of rebuilding a structure of the kind that is replaced, and the excess we charge to capital or income account, so we take up in our operating expenses the cost of reproducing the structure in kind which takes care of all the possible depreciation and is put into the expenses of the road. Now, on equipment, it is very hard to say what is the depreciation of a modern piece of equipment. It is something, of course. But we aim (and I don't think we differ from others) to keep up our repairs, and all of our equipment, as vehicles of commerce, are just exactly as good for our purposes today as they were when we bought them, and some of them are better. Take

a locomotive with us, we generally have to take a year to get it in just the condition we want after it comes from the locomotive builders. It has so to speak, got to get seasoned; it has got to get used to the water, it has got to get used to the coal, and we think they are better after we have had them a year or two than when we bought them, and we aim to renew them as frequently as is necessary to put in new fire-boxes, new flues, and do all that is needed to keep them in good order, and the reason locomotives are discarded is more because of obsolescence of type rather than depreciation of quality. We have locomotives on the road today that are over twenty years old that are perfectly good locomotives and are pulling trains, but they are small. The C. B. & Q. had locomotives that were thirty years old that were perfectly good locomotives, but they were too small, and they are thrown away not because they have depreciated in quality but simply because the demands of commerce are so great that we buy a big one and use it instead of a little one.

Q. Take it all in all, what is the value of the physical property, apart from its earning capacity—I mean having reference merely to its condition—of the Northern Pacific system as compared to a new system presently constructed and equipped as the Northern Pacific is now epuipped and now handed over to the operating department? That is to say, I want to set off so much of depreciation against appreciation, or the contrary as in your judgment is proper.

A. The physical value, you say?

Q. The physical value, purely.

A. I should say that the physical value was a good deal more today than it would be if it was just constructed and turned over to us; or, to take an illustration, the physical value of the St. Paul road, now being built from the Missouri river to the Puget Sound, in ten years from now

will, in my judgment, be a great deal greater than it is the day it is finished.

Q. You do not think the physical value of a newly constructed system would compare with the value of the Northern Pacific which runs parallel to it?

A. Nowhere near.

Q. And this is on account of age and these things that you have explained in regard to the Northern Pacific?

A. It has got seasoned, and we have found out a whole lot of things that we can only learn by time and experience."

John B. Berry, after his inspection of the Northern Pacific System, testified (3 N. P., p. 746) that the appreciation in value more than counter-balances depreciation and that the Northern Pacific System in his judgment was in much better condition than a new line presently constructed, of the same character and extent.

William L. Darling (7 N. P., p. 3228) and A. H. Hogeland (3 G. N., p. 1007) testified to the same effect.

Howard Elliott testified (4 N. P., p 1257) at length to the elements in the Northern Pacific property adding value in addition to the mere physical values of its component parts. He described the location of the lines, the character of the country, towns and cities, through which they run, the terminal facilities owned at points where traffic is received or delivered, the growing character of the country and the nature of the tonnage tributary to the road demonstrating how all of these elements create values in the property. He analyzed the grades showing that

they are favorable and calculated to permit the Northern Pacific lines to meet competition; demonstrated that the property has been well cared for and is widely known; that it possesses an efficient organization; that it reaches from the Great Lakes to tidewater on the Pacific Ocean, and that, it being the pioneer line in many of the communities through which it runs, industries have been built up about it and are, therefore, naturally tributary to it. This creates a constant current of traffic toward it and in a country where population is growing and commerce increasing it demonstrates that the property has future prospects for growth in business. He finally summed up all of the elements of intangible values thus referred to by saying, that while it is impossible to measure by any sum the amount of such values, in his judgment, the property, as a commercial enterprise for doing a transportation business, is worth at least 15% more than the same system newly constructed.

Jas. J. Hill (3 G. N., p. 1288) testified to the same effect in reference to the Great Northern properties. He enumerated credit as an asset of great value in a system and made it plain that the continuous record of the Great Northern showing its ability to make net earnings and meet its obligations and conduct its business in an efficient and reliable way, had created and established its credit throughout the country, and that it is an element of very great value in the property. The location of the system in the different towns, cities and villages through which it passes, being in the center of the commercial communities in each, is an additional element of value; its organization built up only at the expense of a long period

of time and by close attention; the tendency and trend of business toward the railway, sometimes called good-will; all of these elements exist and add value to the property over and above the mere physical inventory value of its physical parts.

The Master found that these lines of railway are efficiently, economically and honestly managed and that they have been located and constructed pursuant to public demand.

Upon the subject of Economy of Management he said (Vol. 1, N. P., 245):

> "It has been urged before the Master with reference to the lines of railway under consideration that the evidence discloses want of economical management in that limited portions of the business were unremunerative and not infrequently resulted in loss.
>
> If the convenience and demands of the public were disregarded, greater economy could doubtless be exercised. Full cars and long trains at fewer intervals would be a great saving of cost, and to this end produce could be stored in elevators awaiting shipment under the most economical conditions. Needless to say that this would result in great public inconvenience and dissatisfaction, and recourse to such methods is unthinkable. The carrier must properly yield to public demand and recoup for loss on other portions of its business.
>
> It is also urged that as to some of the roads surplus lands and equipment are disclosed much beyond present needs. But it is good business sense to anticipate and prepare for the requirements of the near future. Readiness to serve is of the highest importance to those requiring service and an efficient management will, if practicable, take advantage of the markets and buy what

will soon be needeed when it can be obtained at a reasonable price and not wait until it must be had regardless of cost. Present patrons are not to be burdened for the benefit of those to be acquired in the distant future, but they can well afford to pay a somewhat higher rate that they themselves in the near future may enjoy a cheaper and better service. It is proper for the carrier not only to provide itself with ample facilities for the efficient conduct of its present business, but also to anticipate demands soon to be made as the country becomes more prosperous, and it is entitled to revenue sufficient for such purpose.

Having these considerations in mind, it does not appear that the service rendered or the property acquired and held for present and prospective needs are unreasonable or excessive or that any property has been improperly included as a basis of cost of reproduction for rate-making purposes."

This finding was confirmed by the Court in these words (1 N. P., 431):

"The evidence satisfies that the railroads are maintained in excellent condition, that they are efficiently and on the whole economically managed and operated, and are rendering commendable service."

See testimony:

Jas. J. Hill, 3 G. N., 1233-1242.
Howard Elliott, 4 N. P., 1219 et seq.

Giving these elements of value just consideration, therefore, it is plain that the position taken by the complainants in dealing with the question of depreciation was sound and that the facts as shown by un-

disputed evidence when placed in contrast with the minor percentages of depreciation in particular items of the physical property, support the conclusions of the Master and the Court below, that these added elements of value more than outweigh such reductions on accounts of depreciation as might be required. Complainants have not sought in these cases to measure the full ultimate value of these properties because it clearly appeared that even upon the basis of cost of reproduction new, the rates complained of were unreasonably low. The facts in evidence demonstrate that the properties as a whole are worth more in their present condition of efficient operation than equivalent properties newly constructed without the impetus acquired by years of successful operation.

Summary of Results.

In each of the three cases, the record shows that the Master duly considered and made complete findings of facts bearing upon the value of the operated property of each company in the State of Minnesota.

The following results may be summarized from the findings:

Northern Pacific Case.

Cost of Reproduction in State (Report Vol. 1, N. P. 236)	$ 90,204,545.00
Cost of Reproduction of System (Report Vol. 1, N. P. 246)	452,666,489.00
21% (track mileage in Minnesota) assigned to Minnesota	95,059,962.00

Market Value of Stocks and Bonds (System) (Report Vol. 1, N. P. 239)..... 509,824,723.00

21% assigned to Minnesota..... 107,063,191.00

(Note—It will be seen that if a deduction should be made from the stock and bond valuation of a sum to represent the outside properties, such as Northwestern Improvement Company, any amount justified by the evidence would not reduce the value in Minnesota as low as the Master fixed it. To illustrate—if the outside properties be estimated at $75,000,000, the calculation would be as follows:

Total Stock and Bond Value..$509.824,723.00

Deduct for non-operating property 75,000,000.00

Representing operating system.$434,824,723.00

21% assigned to Minnesota ..$ 91,313,191.00)

Par Value of Stocks and Bonds on April 30th, 1908 (Vol. 1, N. P. 239).....$405,796,392.65

21% assigned to State..... 85,217,242.45

Approximate original cost of operating property only, after sundry deductions by Master, (Report Vol. 1, N. P. p. 241) $321,243,555.00

21% assigned to state..... 65,571,462.00

Great Northern Case.

Cost of Reproduction in State, (Report, Vol. 1 G. N. 193)..	$138,425,291.00
Cost of Reproduction of System, (Report, Vol. 1 G. N. 202)..	457,121,469.00
32.59% (track mileage in Minnesota) assigned to State.....	148,975,886.00
Market Value of Stock and Bonds (System) (Report, Vol. 1, G. N. 195).....	452,363,804.00
32.59% assigned to State.....	147,425,363.00
Par Value of Stock and Bonds on June 30, 1908, (Exhibit 54, Parker, Vol. 6 G. N.)....	307,918,689.39
32.59% assigned to State.....	100,350,700.87
Approximate original cost of operating property only after sundry deductions by Master, (Vol. 1 G. N. 197).....	295,401,213.00
32.59% assigned to State.....	96,271,255.00

It is therefore to be seen in each of these two cases that the Master in determining the present value of the property employed in Minnesota upon the basis of the present cost of reproduction, had before him the value of that property as it appeared by various methods of computation and when he adhered to the reproduction cost in Minnesota, he adopted the *lowest basis* that could be arrived at by any recognized method of allocation or assignment. Only on the

basis of the apparent original cost (as reduced by the Master) or of the par value of stocks and bonds can a lower result be reached. Original cost figures only include additions or improvements charged to cost of property and do not include such as in the past were paid for out of earnings. Par value of stock and bonds in like manner only represents money raised by issuance of capital and does not include value of additional property created or acquired by re-investment of income. Therefore, neither original cost nor par value of capital represent the full amount of the actual investment or furnish any criterion of present value.

Minneapolis & St. Louis Case.

Cost of Reproduction in State, (Report, Vol. 1, M. & St. L., p. 172)	$ 21,608,464.00
Market Value of Stocks and Bonds (system) (Report, Vol. 1, M. & St. L., p. 175).....	22,006,197.00
60% (track mileage in state) assigned to Minnesota.....	13,203,718.00
Par Value of Stocks and Bonds, (Report, Vol. 1, M. & St. L., p. 175)	30,011,800.00
60% assigned to state.....	18,007,080.00

Approximate original cost of operating property only, after sundry deductions by Master, (Report, Vol. 1, M. & St. L., p. 177)	28,574,225.00
59.94% assigned to Minnesota..	17,127,390.00
77.41% (gross revenue earned in state) assigned to Minnesota	22,119,307.00

(Note—The Master (Report, Vol. 1, M. & St. L., p. 175) comments upon the fact that the mileage proportion of the value of this Company's total property, ascertained by the market value of its securities, and assigned to Minnesota is one-fifth less than the value conceded by the state within Minnesota. Thus in Defendant's Exhibit "K," Morgan, Vol. 5, M. & St. L., Estimate "A" shows:

Cost of Reproduction new....$	17,393,373.47
Present Value.....	15,000,266.74)

It will later be seen when the percentages of profit earned under the rates in controversy are examined, that the returns from either the local freight or passenger business or from all business in the state are so meager that upon any basis of value within the limits of the above figures, this company did not and cannot earn a fair return. The Master's conclusions in this case were based upon computations that did not take into consideration the recognized extra cost of doing the short haul local business and even without such factor of greater cost, demonstrated the truth of the above statement.

Furthermore, if apportionment of system value to the state be suggested upon any other basis, such as the percentage of gross revenue, train mileage, or operating expense in the State to the total of such items for the system, it will be readily seen that in the cases of the Northern Pacific and Great Northern the value apportioned to the state will in most cases be substantially higher than that adopted by the Master and in no instance substantially lower.

In so far as any such method of apportionment would affect the value in Minnesota of the Minneapolis & St. Louis lines, it would not alter the ultimate fact that the rates in question are confiscatory as to that company upon any basis of valuation.

In conclusion, from the foregoing considerations of the record in the Northern Pacific and Great Northern cases it is clearly seen that:

(a) The Master heard and considered all of the evidence within the reach of either party relating to the original cost of the properties, including so far as now ascertainable amounts charged to cost of property for permanent improvements; the amount of outstanding stocks and bonds and the market value thereof and the present cost of reproduction of the systems as well as of the lines in Minnesota The original cost of construction could not be shown other than by showing the yearly charges to cost of property but for considerable periods in the recent past, quantity and cost figures were shown in support of present quantities and prices claimed. It is not apparent where any evidence on the subject of value has been withheld or neglected. He also heard and considered ample evidence of the earning power of the

properties, their revenues and expenses for the systems and the state, and was able to see by the test of actual experience, not alone the probable earnings under the rates complained of but the actual earnings under the reduced merchandise and passenger rates. Every statistic germane to the problem presented was shown from actual records of accomplished transactions excepting only the probable loss under the enjoined commodity rates and that was fairly computed upon the current volume of business.

(b) The Master found the facts covering all of the above subjects and in the light of them all, he determined the fair present value in Minnesota to lie in the results reached by stating the present cost of reproduction new without deduction for depreciation nor addition for increase in value other than appreciation of roadbed.

(c) In reaching this result he made numerous reductions in the reproduction cost figures proved by complainants, many of which seem arbitrary and unjustifiable in light of the supporting proof from actual records. In case of difference of unit prices among complainant's witnesses, he adopted the lowest figure stated.

(d) The values thus determined are the lowest that can be derived by any fair method of computation and are lower than the proof justified.

(e) The lower Court examined and considered the evidence after full argument and confirmed the Master in his conclusions.

II.

Minnesota Gross Earnings of Each Company.

Total and Each Class of Minnesota Intrastate Gross Earnings.

The gross earnings of each company from all sources in, or chargeable to, Minnesota do not exceed the amount found by the Master in each case respectively.

There is no controversy in these cases as to the total amount of money earned in or chargeable to the Minnesota business of these companies. Appellants have made no assignment of error challenging the correctness of the Master's findings with respect to the *earning from operation.*

A.

The Master Properly Excluded Income From Non-Railroad Property.

Assignment 14 of the second subdivision of assignments of error (p. 447, Vol. 1, N. P.) is as follows:

> "The Court erred in not including in the income of the railroad company all net earnings derived from *other property* acquired by the same capitalization and held and used by the company for profit."

Assignment of error 20 (p. 447, Vol. 1, N. P.) is as follows:

> "The court erred in holding that the income from the stock of an express company owned by and operating over the railroad should not be added to other income for the purpose of determining the adequacy of such total income."

These are the only *assignments of error* calling attention to any omissions of money claimed to have been received by the companies.

These assignments are without merit for the following reasons:

(a) ***Profits or losses resulting from outside investments afford no justification for rate reductions by the state, or for rate increases by the company.***

The income referred to in the assignments of error was not derived from any use of the property valued by the Master. Income from investments in securities of other companies cannot be considered in determining the reasonableness of the rates in question. If a railroad company invest money in the securities of other enterprises and suffer a loss, this would be no justification for raising railroad rates, nor can the income or profits, if any, derived from such outside investments be used by the State as a justification for reducing rates.

(b) ***The amount of profits or losses made in outside investments were wholly immaterial to any issues tried in these cases.***

The question before the Master in the Circuit Court was whether or not the intrastate freight rates and the intrastate passenger fares complained of were confiscatory.

For the determination of that question, the material elements are:

(1) The amount of money yielded by the rates.

(2) The cost of rendering the service covered by the rates.

(3) The value of the property used in the performance of the service covered by the rates.

These are the only *essential elements*, though other matters have necessarily been taken into account, be-

cause the *same property and expenditures* are used and made to render several classes of service, that is, the freight service and the passenger service—and the intrastate and interstate business of each.

Divisions of Minnesota operating expenses and apportionments of the value of Minnesota property must be made to the different classes of business in order to arrive at the net earnings of the intrastate business under examination, and such net earnings must be divided by the corresponding proportionate value of the property in order to ascertain the rate of return.

But it seems plain, that the property *not used at all* for the conduct of the business covered by the rates under examination, or the earnings derived from investments in non-railroad property, need not be taken into account. These matters seem to be wholly immaterial.

B.

The revenues paid by the express companies owned by and operating over the lines of the Northern Pacific and the Great Northern, respectively, for services rendered to the express company by the railway company, were taken into account by the Master, but the property of the express company and its profits resulting from operation—i. e. dividends paid on its capital stock—were rightly excluded from the Master's calculations.

The express companies referred to in the exceptions were those doing business over the lines of the Northern Pacific and of the Great Northern, respectively. The Master found that each railway company owned all the capital stock of the express company operating on its line, and that the business was conducted under

a contract between the express company and the railway company, and that the railway company received compensation for the privileges granted to the express company, and that such compensation is included in the operating revenue of the railway company.

He also found that the express company pays substantial dividends on its capital stock, which are received by the railway company but not included by it in such *operating revenue*, and that there is considerable force in defendants' contention that such dividends should be considered as operating revenue.

He said:

> "It must be remembered however, that the business of an express company is in many respects of a very different character to that of a railway company, and its scope is much broader than that of an ordinary common carrier.
>
> The business of such express company is to assemble, insure, especially care for and speedily forward to and distribute at point of destination all articles of transportation committed to its charge, including the issuing of express money orders, making collections and other like kinds of service required in commercial affairs.
>
> Manifestly such services in general are widely different from those usually performed by a railway company, and suggests the propriety, if not the necessity, of a separate and independent agent for their performance.
>
> Since, however, by ownership of stock the railway company receives the net revenue of the express company, and does not include it as a revenue derived from the operation of its own business, as indeed it is not, it is important that the public who are directly interested in the operating revenue of the railway com-

pany, derived as it is from rates paid by them, should be protected against any *unfair contract* between the railway company and the express company controlled by it whereby the latter may not be accorded full value for services rendered, and the burden of establishing the fairness of such contract whenever called in question is upon the railway company.

In the instant cases, however, the evidence does not justify a finding that the railway companies in question do not receive full and fair compensation for services rendered to the express companies, and they are, therefore, not required to include express *dividends* in their operating revenue."

(Subdivision XVIII Rep., p. 281, Vol. 1 N. P.)

The ground of the claim of appellants that the dividends on the capital stock of the express company should have been included in the operating revenue of the railroad company seems to be that the property (the stock of the express company) was acquired "by the same capitalization" as was the property of the railroad company itself, rather than any claim that the contract between the railroad company and the express company was unfair or that the payments made by the express company were inadequate.

The determination of the Master was right.

In the Northern Pacific case the contract with the express company is printed in the record at page 4253 et seq. vol. 8.

In the Great Northern case the contract with the express company is printed in the record at page 1880 et seq. vol. 4.

It appears that the Northern Pacific Express Com-

pany pays to the railroad company 50% of its entire gross express earnings on the lines of the railway company.

It appears that the Great Northern Express Company pays to the railroad company 40% of the gross receipts of the express company accruing on the lines of the railway company.

It is to be borne in mind that the sums so paid by the express companies to the railway companies were in each case taken into account by the Master and correctly apportioned to the Minnesota Intrastate business. The total amounts were, as stipulated by the parties, in the Northern Pacific case $1,434,877.14 (page 4252 vol. 8 N. P.); in the Great Northern case $911,493.22 (page 1879 vol. 4 G. N.).

By the calculations and tables introduced in evidence by defendants themselves, it is at least *impliedly* conceded that the payments made by the express company to the railway company are sufficient, because the express revenue (that is, the sum paid by the express company to the railway company) was in each instance added to the revenue derived from the transportation of passengers and was treated as passenger earnings. From the total thereof were deducted the passenger operating expenses, to arrive at the net earnings from the passenger department—intrastate and interstate—*thereby assuming* that the cost to the railroad company of producing any given amount of revenue was the same in the express business as in the business of carrying passengers.

The Master followed the same principle.

In the Northern Pacific case there was added in defendant's table, on account of express, to the passen-

ger earnings *in Minnesota alone* $272,062.11 (Vol 10 N. P. Exhibit 3-M., Hillman, table 12).

In the Great Northern case there was added in defendants' table, on account of express, to the passenger earnings *in Minnesota alone* $236,241.66 (Vol. 6 G. N. Ex. G Hillman, table 12).

The question does not arise in the Minneapolis & St. Louis case.

Defendants do not claim that these express companies do not pay as much for the railway services as is paid by express companies generally for like services.

The payments made by each express company under consideration here are reasonable and substantially the same as are paid by other express companies for like services.

The investment by each of these railway companies in the capital stock of the express company was an investment in an enterprise wholly separate from its railway business. It was not bound as a railway carrier to make any such investment or to carry on the business done by the express company. Therefore, it would have no right to make its passengers or shippers bear the loss, if any, resulting from such investment, nor would its patrons be entitled to participate in or benefit by the profits, if any, resulting from such investments.

The amounts received by railway companies generally from express companies for rendering like services may be taken as a guide by which to determine whether or not the express business on the Northern Pacific and on the Great Northern pays reasonable compensation for the service rendered. Indeed, the

real question is,—does each railway company receive a dollar of *revenue* from the express business for each dollar of *expense* chargeable to that business?

The Interstate Commerce Commission, under the authority of the Act to Regulate Commerce, promulgated a classification of the revenues of express companies, effective July 1, 1908. These companies are required to file annual reports with the Commission, showing all operating revenues, expenses, etc.

The Commission's Bureau of Statistics and Accounts, in its first annual report under date of July 1, 1910, tabulates and classifies the statistics derivable from the reports of the express companies. The express companies included are:

Adams Express,
American,
Canadian,
Canadian Northern,
Globe,
Great Northern,
National,
Northern Express (formerly Northern Pacific Express Co.),
Pacific Express,
Southern Express,
United States Express,
Wells Fargo Express,
Western Express.

These, we think, are all of the express companies operating over the lines of railway in the United States. *"Table VI—Analysis of Operating Revenues for Year Ended June 30, 1909,"* appears on pages 29 and 30 of the Commission's report. In this table appear 14 different items, each designating a certain class of receipts and making up the "gross receipts from operation." Item 1, "Express Revenue," according to the

Commission's classification of operating revenues of express companies above referred to, "includes the carriers' proportion of receipts for the transportation of freight, money or valuables by express * *". (See page 13.)

The 13 *other* items of receipts include amounts earned for the transportation of goods, Custom House Brokerage Fees, Order and Commission Department, Rents, Money Orders, Traveller's Checks, C. O. D. Checks, Telegraphic Transfers, Letters of Credit, etc., etc.

The Commission's classification of revenues also defines "Express Privileges—Dr"—"to this account should be charged all amounts paid to companies, firms or individuals for privilege of conducting any express business over their transportation lines."

In the fiscal year ended June 30, 1909—the same year referred to in the stipulation above cited—the grand total of "Express Revenue" received by the 13 companies above mentioned was $130,130,126.61. The total amount paid to the carriers over whose lines the express companies conducted business, included in the table as "Express Privileges—Dr.," was $64,032,-126.69 (which total includes the $100,000 advance payment on account of contract mentioned at page 4252 Vol. 8 N. P. Case).

As we calculate it, the average percentage paid by all express companies to the railway companies—$64,032,-126.69 divided by $130,130,126.61—is 49.2% of the express revenue.

Even if it be Held that the Great Northern Express Company should have paid to the Railway Company

50% of the Express Revenue Accruing on the Lines of the Railway Company, the Increased Amount of Revenue Chargeable to the Minnesota Intrastate Passenger Business would be very small.

As heretofore shown, the Great Northern Express Company paid to the railway company on the business of the fiscal year ended June 30, 1909, $911,493.22 (page 1879, Vol. 4, G. N. case). This was 40% of the express revenues accruing on the Great Northern system. Fifty per cent of such express revenue would produce an increased payment of $203,873.30. This system item would be apportioned to the Minnesota intrastate business on the revenue basis; that is, by assigning to such business such portion of such increase, $203,873.30, as the Minnesota intrastate passenger revenue is to the system passenger revenue. The Minnesota intrastate passenger revenue is, as found by the Master, $1,750,522.02. (Vol 1, 270 N. P. Case.) The system passenger revenue was $11,192,461.25. (Vol. 6, G. N. Exhibit 53 Ward.) The Minnesota intrastate percentage of the total is 15.6%.

If 15.6% of such increase of $203,873.30 is to be charged on account of express business, the Minnesota intrastate net passenger earnings, as found by the Master, would be increased $31,804.23, sufficient to pay on the value of property assigned by the Master to the Minnesota intrastate passenger business, $14,243,633.00, about .2 of 1 per cent.

The rate of return found by the Master on that business was 0.925% annually. The increase allowance therefore would not be sufficient to make the return 1% annually.

Even if dividends on capital stock of express company, in each case, a system item, were taken into account, the amount chargeable to the Minnesota intrastate business would be very small.

In the Northern Pacific case the total earnings of the Company in Minnesota (including both intrastate and interstate business) are only 19.5% of the total earnings of the system, and the Minnesota intrastate business (including both freight and passenger) is only 21.1% (of which 12.05% is intrastate passenger business and 9.05% is intrastate freight business) of the total in Minnesota; that is to say, the Minnesota intrastate business is 21.1% of 19.54%, or about 4.12% of the gross earnings of the system. (See annual reports at end of Vol. 1 N. P., also Master's table attached to page 264, Vol. 1, N. P. case.)

As already appears, the express company paid to the railway company, and the Master took into account, 50% of the express revenue accruing to the Northern Pacific system.

It further appears that as a stockholder of the express company the railway company received dividends amounting to $400,000, and there was carried to profit and loss account as a profit, $251,464.87 (not all accruing on the system of the Northern Pacific) making a total of $651,464.87 (not taking into account $100,000 set aside on account of amortization of contract). (Page 4252 Vol. 8 N. P.)

If such dividends and profits were taken into account and apportioned to the Minnesota intrastate business by assigning thereto 4.12%, the "income applicable to valuation" as found by the Master in his table (page 264, Vol. 1, N. P.) would be in-

creased, as we calculate, about $26,840.33, sufficient to pay an annual return on the amount assigned by the Master to the Minnesota intrastate business, $19,027,619, of about 1/7 of 1%. The rate of return on the Minnesota intrastate business (freight and passenger) as found by the Master was only 2.909%.

In the Great Northern case the total earnings of the company in Minnesota (including intrastate and interstate business) were 37.25% of the total earnings of the company on its system, and the Minnesota intrastate business was 22.14% (of which 10.29% was intrastate passenger and 11.85% was intrastate freight) of the total system in Minnesota; that is to say, Minnesota intrastate business was 22.14% of 37.25% or 8.247%.

As a stockholder of the express company the railway company received dividends amounting to $250,000., and there was carried forward to its profit and loss account as a profit, $129,236.38, making a total of $379,236.38 (page 1880, Vol. 4, G. N.).

If such dividends and profits were apportioned to the Minnesota intrastate business by assigning thereto 8.247% thereof, the "income applicable to valuation" as found by the Master in his table attached to page 270, Vol. 1, N. P. case, would be increased by $31,275.62, or sufficient to pay on the valuation assigned by the Master to the Minnesota intrastate business, $30,685,833, or .1%, which added to the rate of return as found by the Master produces 3.459% as the annual return on the intrastate business.

C.

All items of earnings and income derived from any use of the property valued were included by the Master.

In each case the Master took into account, as stated by him, "the total gross earnings of the company from all sources involving any use of the property above valued within the State of Minnesota * * *."

These earnings included freight revenue derived from the transportation of freight; miscellaneous freight earnings derived from switching, demurrage, storage, etc.; passenger revenue derived from the transportation of persons; miscellaneous passenger earnings derived from the transportation of mail, express, excess baggage, etc.; and in each case the Master took into account such sums and also further sums known as "income items," concerning which he said:

> "In addition to the foregoing earnings, there was derived from the use of the property included in the foregoing valuation certain 'miscellaneous income net items' from outside operations (sleeping, parlor and dining cars, etc.), rentals received for use of tracks, yards and other property and hire of equipment."

For the *Northern Pacific case* see pp. 258-260, Vol. 1, N. P.

For *Great Northern case* see pp. 265, 266, 267, Vol. 1, N. P.

For *Minneapolis & St. Louis case* see pp. 278 and 279, Vol. 1, N. P.

(For illustration of items making up miscellaneous earnings see the Annual Reports printed at the end of the first volume in each case.)

In the *Northern Pacific case*, the detailed calculations stated by the Master in his Report are based on the year ending June 30, 1908. The defendants intro-

duced detailed calculations based on the business of the preceding year. There is, therefore, no basis for comparison.

In the *Great Northern case*, the detailed calculations of both complainants and defendants were based on the business of the year 1908. The Master charged more to the company than the amounts claimed by the defendants in their tables.

On page 272, Vol. 1 N. P. case, referring to the Great Northern case, the Master said:

> "The gross receipts of said company from all sources in Minnesota used in the foregoing table exceeds the gross receipts charged against the company in Minnesota by defendants' evidence (excluding income on investments), $146,528.27, of which more than $140,000 was on account of hire of equipment not taken into account by defendants in their tables.
>
> There is no dispute between the parties as to the total amount of operating expenses chargeable to the business of the company done within the State."

After deducting operating expenses and taxes, the Master found the net earnings of the Great Northern in 1908 from all its business in Minnesota to be $8,180,025.11. (p. 270, Vol. 1 N. P. case.)

The defendants by their evidence (Exhibit G-Hillman, Table 13) claimed such net earnings—after deducting operating expenses and taxes—to be only $7,991,505.

It therefore appears that the Master charged the company with $188,520.11 of net earnings in excess of that claimed in the evidence of the defendants, and, as stated by the Master, there was no dispute between the parties as to the total amount of operating ex-

penses (nor was there any dispute as to the total amount of taxes) chargeable to the business of the company in the State of Minnesota.

In the *Minneapolis & St. Louis case*, the Master's detailed calculations are based on the results of operation for the year ended June 30, 1907. The defendants' detailed calculations are based on the results of operation for the year ended June 30, 1908.

There was no controversy in the evidence as to the total amount of earnings chargeable to Minnesota.

(The amounts found by the Master appear at p. 278-279, Vol. 1 N. P.)

In the *Minneapolis & St. Louis case*, the Master also found the net earnings of the whole system remaining, after paying only operating expenses and taxes, by years, as follows:

Net Earnings, M. & St. L., Entire System.

1903	$1,398,895.30
1904	1,229,524.49
1905	1,277,870.96
1906	1,511,961.99
1907	1,419,822.54
1908	1,220,862.21
1909	1,286,494.08

The mileage of this company increased about two hundred miles during the period covered between 1903 and 1909, by additions to its lines in South Dakota.

The Master found the net earnings of the company from its Minnesota business, after paying only operating expenses and taxes, by years, as follows:

Net Earnings, M. & St. L., in Minnesota.

1903	$1,222,941.77
1904	1,052,478.74
1905	1,054,853.35
1906	1,109,260.56

1907	895,977.66
1908	742,377.46
1909	794,472.58

It will be observed that the net earnings in Minnesota declined very much between 1903 and 1909.

The annual interest charges on its outstanding bonds amount to $952,583. If there be apportioned to the Minnesota business its share, on the basis of gross earnings in Minnesota, compared with the gross earnings of the whole system, the amount chargeable to it would be *$690,517*. (See p. 276, Vol. 1 N. P.)

The rates complained of were not in effect during the whole of the fiscal year ended June 30, 1907. The Master found that if such rates had been in effect during all that year, losses would have resulted as follows:

Intrastate freight	$64,314.96
Intrastate passenger	67,043.34
Total	$131,358.30

It also appears (Exhibit 14 A-Tittemore, Vol. 6 M. & St. L.) that if the Commodity Rates Act, which was enjoined, had been in effect during that year, the loss resulting to the *interstate business in Minnesota* would have amounted to $66,842.46.

It also appears (Exhibit 13-Scott, Vol. 6, M. & St. L.) that the annual loss resulting from the passenger fares complained of was $66,372 *on the interstate passenger business in Minnesota.*

The losses resulting to the Minnesota interstate business from the enforcement of the merchandise rates is not shown. We calculate from the figures just given that the total loss to the business of the Company within Minnesota would have been more than $264,572.63.

If such sum be deducted from the Minnesota net earnings for 1907, 1908 and 1909, respectively, the balance remaining in each year will be far below the amount of interest on bonds chargeable to the Minnesota business as aforesaid.

Such interest deficits are as follows:

For 1907	$59,111.97
For 1908	212,712.17
For 1909	160,617.05

It will be observed that the interest charge of $690,517 so apportioned to Minnesota is less than 3 1-3 per cent of the value of the Minnesota property as found by the Master, and it is difficult to escape the conclusion that this company must earn more money in order to enable it to avoid insolvency.

D.

Allocations of Revenue to the Different Classes of Business.

In each of these cases it appears that the operating property in Minnesota was used for the transportation of intrastate business and interstate business, both freight and passenger. Revenue derived from such transportation was directly allocated to the class of business producing it.

No exception or assignment of error challenges the Master's determination of the total amount of such revenue or the allocations of the same.

E.

Apportionments of Common Items of Miscellaneous Earnings.

The miscellaneous freight earnings and the miscel-

laneous passenger earnings referred to by the Master in his findings are derived from both interstate and intrastate business in the freight and passenger departments respectively, and cannot be directly allocated.

The Master divided such miscellaneous earnings by assigning to the intrastate business such proportion of the total miscellaneous earnings in the State as the revenue derived from the corresponding transportation business is to the total revenue derived from transportation, both intrastate and interstate, and by assigning the balance of such miscellaneous earnings to the interstate business—freight and passenger separately.

No exception or assignment of error challenges the correctness of these divisions, and it is, therefore, unnecessary to go beyond the Master's findings.

F.

Items of Net Income.

The net income items involving any use of the railway property may be embraced in three classes:

(1) "Outside operations," a passenger item, including earnings from sleeping cars, parlor and chair cars, dining and special cars, hotels, restaurants, etc.

(2) "Rentals" from tracks, yards and other property, arrived at by taking into account rents collected and rents paid.

(3) "Hire of equipment" is a net item arrived at by taking into account the amount collected from other companies and the amount paid to other companies for use of equipment.

(See Exhibit 80 B-Elliott, Vol. 10 N. P.)

These items were divided as follows:

Outside operations, to the passenger business, between the intrastate business and interstate business, on the basis of revenue derived from the transportation of persons.

Rentals, etc., and hire of equipment are items common to both the freight and passenger departments, and were divided between these departments, and the intrastate and interstate business of each, on the basis of the transportation revenue.

It will be observed that in the *Northern Pacific case* there was added on account of these items $190,926.84 to the earnings of the freight department, and $156,009.56 to the earnings of the passenger department. (p. 264, Vol. 1 N. P.)

In the *Great Northern case* there was added on account of these items $363,732.46 to the earnings of the freight department, and $191,677.36 to the earnings of the passenger department. (p. 270, Vol. 1 N. P.)

In the *Minneapolis & St. Louis case* there was added on account of these items $68,532.40 to the earnings of the freight department, and $25,982 to the earnings of the passenger department.

No assignment of error challenges the correctness of the Master's determination of the aggregate amount of these items of net income which are allied to operation, or to division of the same between the freight department and the passenger department, or between the intrastate and interstate business of either.

It is, therefore, unnecessary to go beyond the Master's findings upon this point.

III.

Operating Expenses.

The Decisions—Master's Findings.

The methods followed by the Master for the determination of the cost of the intrastate business are essentially the same as those approved by the Supreme Court and other Federal Courts.

The extra cost of intrastate business as found in these cases, is low when compared with corresponding findings in other cases.

The evidence was sufficient, not only to justify, but to require a finding that such extra cost was higher than that found by the Master.

The decisions of the Supreme Court and other Federal Courts in rate cases similar to these, justify the following statements:

(1) The intrastate rates complained of cannot be sustained, because of the fact—even if it were a fact—that the earnings from all business—interstate and intrastate, in the State are sufficient.

(2) It is necessary to take into account the cost of doing the business covered by the rates complained of.

(3) Intrastate business, both freight and passenger, has been found in all reported cases to have been attended by higher cost than corresponding interstate business.

(4) The cost of the intrastate business may be indicated:

(a) By the relation of the cost of the intra-

state unit (the ton-mile or the passenger-mile) to the cost of the corresponding interstate unit.

(b) By the relation of the cost of the intrastate business in proportion to revenue derived therefrom to the cost of the corresponding interstate business in proportion to revenue derived therefrom, i. e., the cost to earn a dollar in the one class to the cost to earn a dollar in the other.

(c) The relation of the cost of the intrastate business in proportion to revenue derived therefrom to the cost of all business on the system—or within the state—in proportion to the revenue derived therefrom.

(5) The revenue derived from the intrastate business must be found and compared with the cost thereof.

(6) The exact cost of doing either class of business, either intrastate or interstate, has never been kept by any railroad company. There is no recognized method for the keeping of such cost in railroad accounts, or for its ascertainment with mathematical exactness.

(7) The courts and men experienced in such matters agree that, while the exact cost of doing either of such classes of business cannot be shown, the opinions of experts, familiar with conditions bearing upon the relation of cost of the intrastate business to that of the interstate business, furnishes the only guide for such determination.

(8) In all reported cases it has been found that it costs substantially more to earn a dollar in the intrastate than in the corresponding interstate business,—and very much more to produce a ton-mile in the intrastate freight business than in the interstate freight business.

(9) That the cost to produce a ton-mile (where the relation of cost is expressed on that basis) has never

been found to be less than two and one-half times as much in the intrastate business as in the interstate business.

(10) Neither the "straight ton-mile basis" or the "straight revenue basis" has ever been found to fairly divide freight operating expenses between the intrastate business and the interstate business, because the intrastate business costs more per ton per mile and has always been found to cost more in proportion to revenue than in the corresponding interstate business.

(11) In all cases a fair division of freight operating expenses may be made between intrastate business and interstate business on either the "Equated Ton-Mile Basis" or the "Equated Revenue Basis," as found and used by the Master. Each basis may be expressed in terms of the other and the result is the same whether one or the other is used.

(12) It costs more to produce an intrastate passenger mile than an interstate passenger mile, but such proportion of extra cost is usually, if not always, less in the Passenger Department than the proportionate extra cost of producing an intrastate ton mile in the Freight Department.

(13) Passenger operating expenses may fairly be divided between intrastate business and interstate business on the "Equated Passenger Mile Basis" or the "Equated Revenue Basis," as found and employed by the Master in these cases. Each may be expressed in terms of the other and the result is the same whether one or the other is used.

Summary of Methods and Results of Master in Ascertainment of the Cost of Intrastate Business— Freight and Passenger.

(1) The Master ascertained the total amount of operating expenses incurred in or chargeable to the Minnesota business.

This amount is not in controversy between the parties.

(2) The total amount of operating expenses so charged to the State was divided between the freight department and the passenger department in the Northern Pacific and Great Northern cases, respectively, by *allocating directly* to each department the expense incurred therein (about 60% of all) and by dividing the balance on the train-mileage basis as to most of the items and on the engine-mileage basis as to the rest. (Sub-Division XVI Master's Report, pages 252-255, Vol. 1 N. P.)

This method is usually employed by railroad companies and generally recognized as fair.

There is no controversy between the parties as to the *allocation* of items.

The *division* of common items is objected to by the appellants.

(3) There is no controversy between the parties in the Minneapolis & St. Louis case as to the correctness of the Master's division of the total operating expenses charged to the State or the division between the freight department and the passenger department

(4) For the division of the freight operating expenses in the State of Minnesota between the intrastate

business and the interstate business therein, in the Northern Pacific and the Great Northern cases respectively, he ascertained:

(a) The number of ton miles in each class of business—intrastate and interstate. (Page 255-258, Vol. 1 N. P.)

(b) The relative average haul of the intrastate business to that of the interstate business. (Page 256.)

(c) The relative cost per ton per mile of the intrastate business to that of the interstate business as follows:

"That the cost per ton mile of doing state freight business is *at least* two and one-half times as much as is such cost in doing the interstate freight business in Minnesota, *and that the testimony would amply sustain, if it does not compel, a finding that such relation of cost is as three to one.*" (Page 258.)

(d) The revenue derived from the intrastate business and the interstate business respectively.

(e) The average revenue per ton per mile from each class of business and the relation of that in the intrastate business to that in the interstate business. (Pages 260-261, also 267-268, Vol. 1, N. P. case.)

(f) The relation of the cost of the intrastate business, in proportion to revenue derived therefrom, to the cost of the interstate business in proportion to the revenue derived therefrom was found by dividing the relation of the cost per ton per mile by the relation of the revenue per ton per mile, producing in the N. P. case the relation of cost in proportion to revenue 1.7377 to 1 (Page 261), and in the Great Northern case 1.23217 to 1 (Page 268).

(g) By means of these factors he divided the total Minnesota freight operating expenses be-

tween the intrastate business and the interstate business on both bases aforesaid, namely, the "Equated Ton-Mile Basis" and "Equated Revenue Basis," each being the equivalent of the other as follows:

(1) Equated ton-mile basis: He multiplied the number of intrastate ton miles by 2½ and added the product to the number of interstate ton miles. This sum may be called "Equated Ton-Miles." He then took such percent of the total Minnesota freight operating expenses as the intrastate ton miles so increased was to the total equated ton miles for the intrastate operating expenses, the balance of the operating expenses being taken for the interstate operating expenses.

(2) Equated revenue basis: He increased the intrastate revenue by the excess of the cost of the intrastate business per ton mile in proportion to the revenue derived therefrom over the cost of interstate business per ton mile in proportion to revenue derived therefrom and added the same, *so increased,* to the interstate revenue. The total may be called the "Equated Revenue." He then took such per cent of the total Minnesota operating expenses as the intrastate revenue so increased was to the total revenue so equated for the intrastate operating expenses and found the balance of the total operating expenses to be the interstate operating expenses. (Pages 261-262; also 268-269.)

(5) For the division of the Minnesota passenger expenses between intrastate and interstate business therein, he ascertained:

(a) The number of passenger miles in each class.

(b) The relative cost per passenger per mile of the intrastate to the interstate business as follows, to wit:

"That the cost per passenger mile in the state passenger business is *at least* 15% greater than such cost in the interstate passenger business in Minnesota." (Page 258.)

(c) The revenue derived from each class of passenger business.

(d) The revenue per passenger per mile from each class of business and relation of that derived from the one class to that derived from the other. (Page 262-269.)

(e) The relation of cost in proportion to revenue was found by dividing the relation of cost per passenger mile by the relation of revenue per passenger mile. (Page 262-269.)

(f) By means of these factors he divided total Minnesota passenger operating expenses between intrastate business and interstate business on both bases—that is, on the "Equated Passenger Mile Basis" and the "Equated Revenue Basis," each being the equivalent of the other, by methods similar to those employed for the division of the corresponding freight operating expenses.

(6) In the Minneapolis & St. Louis case the Master divided the Minnesota freight operating expenses and Minnesota passenger operating expenses between the intrastate and interstate business of each respectively, upon the straight revenue basis, but said such basis "does not assign to either class of such intrastate business the full amount of operating expenses which was actually expended in the conduct thereof." (Page 280, Vol. 1 N. P.)

Note.—In this case the net earnings from all business and the net earnings from the intrastate business were small and apparently the Master was of opinion that so plain a case of confiscation had been made out

that it was not necessary to show how small the rate of return—if any—would have been if the factor of extra cost had been applied in making the calculations.

Amount of Extra Cost of Intrastate Business as Found by the Master in These Cases Compared with Corresponding Findings of Extra Cost in Similar Railroad Rate Cases.

The extra cost of the intrastate business as found by the Master in the Northern Pacific and Great Northern cases may be expressed in four ways—each the exact equivalent of the other, namely:

(1) The extra cost of intrastate business over the cost, by percentage of operating expenses to revenue, of all business on the system:

Northern Pacific	19.2%
Great Northern	7.7%

(2) Extra cost of the intrastate business over the cost, by percentage of operating expenses to revenue, of all business in Minnesota:

Northern Pacific	20.3%
Great Northern	17.0%

(3) On unit of service basis.

Northern Pacific and Great Northern extra cost per ton per mile of the intrastate business over the interstate business 150%, or, the cost is as 2½ to 1.

Extra cost per passenger per mile of the intrastate business over that of the interstate business, 15%.

(4) Revenue basis.

In the Northern Pacific case the intrastate freight cost in proportion to revenue exceeds the interstate cost

in proportion to revenue 73+%, or in proportion to revenue, the relation is as 1.73 to 1.

In the passenger business the intrastate cost per passenger per mile, in proportion to revenue, exceeds the interstate cost per passenger per mile in proportion to revenue, 13+%. The relation of such cost is 1.13 to 1.

In the Great Northern case the intrastate cost in proportion to revenue, exceeds the interstate cost in proportion to revenue, 23+%, or the relation is 1.23217 to 1 in the freight and 1.2378 to 1 in the passenger business.

(See table att .ed to page 264 and table attached to page 270, Vol. 1 N. P. Case.)

Findings in These Cases Compared with Corresponding Findings in Similar Cases.

The extra cost as found by the Master in these cases, having been stated on the various bases (each being the equivalent of the other), the same may readily be compared with similar findings in the reported cases.

In *Ames v. Union Pacific*, 64 Fed. 165, 184, the substance of the testimony of the Secretary of the defendant Board was quoted as follows:

> "That it costs more to do local than through business; that the percentage of operating expenses on the local business would exceed the percentage on all business probably 10%, and might run up to 20%,—possibly, might be higher than that."

The phrase "local business" was used as the equivalent of intrastate business.

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The phrase "all business" was used to include all business on the whole system.

The calculations were made on the assumption that the extra cost was 10%.

In *Smyth v. Ames*, 169 U. S. 466, at page 529, this Court, referring to the same testimony said:

> "He estimated that the percentage of operating expenses on local business would exceed the percentage of operating expenses on all business by at least 10%, and that it might go as high as 20%, or higher. And this view is more than sustained by the evidence of witnesses possessing special knowledge of railroad transportation and of the cost of doing local business as compared with what is called through business."

Note—The findings of extra cost above referred to are to be compared with 19.2% on the Northern Pacific and 7% on the Great Northern.

In *Northern Pacific v. Keyes*, 91 Fed. 44—North Dakota Rate Case—at page 55, it was found that the percentage of extra cost of local business over the percentage of operating expenses and taxes to gross receipts on the entire road was in each case as follows:

Northern Pacific	31.41%
Great Northern	30.25%

Note—These percentages are to be compared with 19.2% in the Northern Pacific case and 7% in the Great Northern case.

In *C. M. & St. P. Ry. Co. v. Tompkins*, 176 U. S. 167, 177, it is said:

> "But the testimony shows that the cost of doing local business is much greater that that of doing

through business. If it should be 85% of the gross receipts (and there was testimony tending to show that it was as much if not more) then a reduction of 15% in the gross receipts would leave the property earning nothing more than the expenses of operation."

Note.—In the cases at bar the result of the findings of the Master is that operating expenses and taxes chargeable to the Minnesota intrastate business consume of the total receipts chargeable thereto, percentages as follows:

Northern Pacific	80.5%
Great Northern	77.7%
Minneapolis & St. Louis	76.4%

In *Minneapolis & St. Louis v. Minnesota*, 186 U. S. 257, at page 262, it was said:

> "* * * in addition to this there is an increased cost of local business over through business in the additional fuel consumed and the increased wear and tear upon the machinery of each train, involved in stopping at every station. These facts were noticed by Mr. Justice Brewer in the opinion of the court in *Chicago, etc. v. Tompkins*, 176 U. S. 167 * * *".

And language used by Mr. Justice Brewer in that case is quoted at some length.

In Re Arkansas R. Rates, 163 Fed. 141, an application to Circuit Judge Van Devanter (now Mr. Justice Van Devanter) for a temporary injunction to restrain the enforcement of state-made freight and passenger rates, at page 142, it is said:

> "The proofs make it quite plain that the production of a given amount of revenue is attended with greater cost in intrastate business than in interstate business; and that this is a generally

recognized fact is attested by the decisions in other cases where the reasons which make it so are fully stated. *Chicago, etc., Co. v. Tompkins*, 176 U. S. 167, 178, 20 Sup. Ct. 336, 44 L. Ed. 417; *Minneapolis, etc., Co. v. Minnesota* 186 U. S. 257, 262, 22 Sup. Ct. 900, 46 L. Ed. 1151; *Northern Pacific Ry. Co. v. Keyes* (C. C.) 91 Fed. 51, 53. Here the additional cost is shown to be at least 100 per cent in freight traffic and at least 15 per cent in passenger traffic, and this is not more than what has been shown in other cases."

Note.—The percentages last above stated are to be compared with those in the cases at bar as follows:

Freight Traffic, Northern Pacific.....73+%
Freight Traffic, Great Northern.....23+%
Passenger Traffic, Northern Pacific....13+%
Passenger Traffic, Great Northern.....23+%

In *St. Louis & San Francisco v. Hadley*, 168 Fed. 318, the Court found that on the revenue basis the extra cost of doing the state freight business was 50% more than the cost of doing the interstate freight business, and that the cost of doing the state passenger business was 25% more than the cost of doing the interstate passenger business.

Note—These percentages are to be compared with the percentages in the cases at bar last above given.

In *M. K. & T. v. Love*, 177 Fed. (The Oklahoma Rate Cases) on an application to Circuit Judge Hook for temporary injunctions restraining the enforcement of state made rates, it was said (Page 499):

"Bearing on the division of expense is the much controverted question of extra cost of local busi-

ness as compared with the interstate. That the former costs much more than the latter is beyond doubt, but the difficulty is in applying the measure of difference. There is a general accord among practical railroad men of high standing and long experience that the cost of local freight traffic is from 2 to 8 times as much as that of interstate traffic, and of local passenger traffic from 25 to 50 per cent more than the other. * * *"

At pages 500 and 501 results are shown assuming different factors of extra cost.

In *St. Louis & Southwestern Railway Company v. Allen, et al.* and *St. Louis I. M. & S. Railway v. Allen, et al.*, 187 Fed. 290 (The Arkansas Rate cases), at page 342, it was shown that on the Iron Mountain road it costs 210% more to produce an intrastate ton-mile than an interstate ton-mile, i. e., that the intrastate cost was 3.1 times as much as the interstate cost per ton per mile and that in the passenger business "after deducting the increased revenue the intrastate passenger service should be charged with 10% greater net cost than the through."

It was found on the Southwestern road that the difference in cost of the intrastate business over the interstate business was 250%, i. e., that it cost 3.5 times as much to produce an intrastate ton-mile as to produce an interstate ton-mile and that the extra cost of the intrastate passenger over the cost of the interstate passenger is no greater than the excess of intrastate passenger revenue over interstate passenger revenue and therefore no extra cost was allowed.

It was said, page 343, "The state tariff is found to be, (in the Southwestern case) as that of the Iron Mountain, 50 per cent, higher than the interstate."

Note.—The relation of the intrastate freight cost to the interstate freight cost as indicated by the findings last above quoted may be stated as follows:

(1) Relation of cost per ton per mile intrastate to interstate were, Iron Mountain, 310 to 100; Southwestern Road, 350 to 100.

In the Northern Pacific and Great Northern cases at bar, it was found to be 250 to 100.

(2) Relation of cost to earn a dollar on the intrastate freight business to the cost to earn a dollar on the interstate freight business, Iron Mountain Road 206+ to 100; Southwestern Road, 233+ to 100.

In cases at bar, such relations were: Northern Pacific 173+ to 100; Great Northern 123+ to 100.

The cases above referred to fully sustain the Master's methods and findings.

Interstate rates do not affect the reasonableness of intrastate rates.

It is well settled that the reasonableness of the rates prescribed by the State must be determined without regard to the profits or losses resulting to the carriers in the conduct of their interstate business. The State will not be permitted to prescribe unreasonably low rates upon intrastate business, because perchance the carriers may earn large profits on interstate business, nor can the carriers justify unreasonably high rates on intrastate business in the State, upon the ground that they can only in that way meet the losses resulting in their interstate business. Neither class of business should bear the losses resulting from the conduct of the other class of business. And neither class of business is entitled to the benefit of any part of the profits

resulting from the conduct of the other class of business. (*Smyth v. Ames*, 169 U. S. 466, 541.)

It, therefore, follows that in all judicial examinations of the reasonableness of state-made rates, it is necessary, among other things, to ascertain, with as much accuracy as is practicable, what the cost of doing the business affected by the rates complained of is.

All of these companies are engaged in both state and interstate business. The whole of the railroads of each company constitutes one system which is operated as such. Its cars, engines, supplies and appliances are for the most part used upon the system wherever required. It is impossible to operate such railroads separately in Minnesota or in any state, and, for the most part, the trains of each company necessarily move between different states, the same train and the same cars carrying both interstate freight and passengers, and freight and passengers locally, within each of the states into which the lines of the company extend.

The two classes of business are conducted by means of the same instrumentalities and men, and so far as the performance of the services is concerned there is no attempt to separate such classes of business either between states or between the intrastate business and interstate business in any state. It will not be denied that the mingling together of the different classes of business is absolutely necessary for the reasonable and economical operation of the roads.

The volume of the intrastate business is relatively small.

In the Northern Pacific and Great Northern cases, the volume of the Minnesota intrastate business, as

well as the revenue derived therefrom, is very small when compared with the volume of all of the business done by these companies on their whole systems or within the limits of Minnesota.

For example, it appears in the *Northern Pacific* case (Ex. 80 Elliott, Vol. 10 N. P.) that the total tons of revenue freight carried one mile on the system was 5,156,378,369, of which 1,091,290,482 were carried within the State of Minnesota, of which 130,580,988 were intrastate ton miles in Minnesota; that is to say, of the total ton miles of the system, the total in Minnesota was only 21.1 per cent, and the total intrastate in Minnesota was only 2.5 per cent. Passengers carried one mile on the system were 794,351,948 (Ex. 80 Elliott, Vol. 10 N. P.). Intrastate passengers in Minnesota carried one mile were 52,317,140, or 6.5+ per cent.

In the *Great Northern case,* by Exhibit 53 Ward, Vol. 6 G. N., it appears that the tons of revenue freight carried one mile of the system was 5,164,176,870, of which 2,123,744,733 were in Minnesota, of which 171,317,766 were intrastate ton miles in Minnesota; that is to say, 41 per cent of the total revenue ton miles of the system are performed within the State of Minnesota, *but, by the same exhibit it appears that on the Mesabi Division in Minnesota, 575,234,319 ton miles were iron ore, which is hauled a distance of a little more than 100 miles from the mines in northern Minnesota to the ore docks at Superior, Wisconsin. There is no other traffic in Minnesota at all comparable with the ore traffic either as respects volume, rates or cost of transportation.* The total Minnesota intrastate ton miles are only 3.3 per cent of the total ton miles on the

NORTHERN PACIFIC, FISCAL YEAR ENDED JUNE 30, 1908.

Operating Revenues	$68,235,484.17
Outside Operations	640,925.86
Total	$68,876,410.03
Operating Expenses	$39,865,033.30
Taxes	2,717,485.67
Total	$42,582,518.97

(See page 39 of Annual Report 1908, Vol. 1, N. P.)

IN MINNESOTA, AS FOUND BY THE MASTER, P. 264, VOL. 1 N. P.

	Intrastate	Interstate	Total
Freight Revenue	$1,555,342.92	$7,953,734.41	$9,509,077.33
Miscellaneous Freight Earnings	51,428.34	263,002.68	314,431.02
Freight Earnings	$1,606,771.26	$8,216,737.09	$9,823,508.35
Rentals and hire of equipment (Net)	31,227.99	159,698.85	190,926.84
Total Freight	$1,637,999.25	$8,376,435.94	$10,014,435.19
Passenger Revenue	$1,015,150.34	$1,940,718.17	$2,955,868.51
Miscellaneous Passenger Revenue	191,182.75	365,487.26	556,670.01
Passenger Earnings	$1,206,333.09	$2,306,205.43	$3,512,538.52
Outside Operations (Net)	30,133.34	57,606.41	87,739.75
Rentals and hire of equipment (Net)	23,446.58	44,823.23	68,269.81
Total Passenger	$1,259,913.01	$2,408,635.07	$3,668,548.08
Total of all Earnings	$2,897,912.26	$10,785,071.01	$13,682,983.27
Freight operating expenses	$1,355,273.82	$3,988,444.43	$5,343,718.25
Taxes	71,820.32	367,286.53	439,106.85
Total	$1,427,094.14	$4,355,730.96	$5,782,825.10
Passenger operating expenses	$863,325.18	$1,448,306.77	$2,311,631.95
Taxes	53,924.08	103,087.58	157,011.66
Total	$917,249.26	$1,551,394.35	$2,468,643.61
Total of all Operating Expenses and Taxes	$2,344,343.40	$5,907,125.31	$8,251,468.71
Income from all Minnesota business applicable to valuation	$553,568.86	$4,877,945.70	$5,431,514.56
Valuation apportioned on Earnings basis	$19,027,619.00	$71,176,926.00	$90,204,545.00
Annual return	2.909%	6.853%	6.021%

(P. 264, Vol. 1 N. P.)

GREAT NORTHERN, FISCAL YEAR ENDED JUNE 30, 1908.

Operating Revenues	$54,069,538.74
Outside Operations	333,743.93
Total	$54,403,282.67
Operating Expenses	$35,867,624.00
Taxes	2,276,074.18
Total	$38,143,698.18

(See page 39 of Annual Report 1908, Vol. 1, G. N.)

IN MINNESOTA, AS FOUND BY THE MASTER, P. 270, VOL. 1, N. P.

	Intrastate	Interstate	Total
Freight Revenue	$2,366,359.02	$13,292,302.05	$15,658,661.07
Miscellaneous Freight Earnings	42,062.41	236,275.37	278,337.78
Freight Earnings	$2,408,421.43	$13,528,577.42	$15,936,998.85
Rentals and hire of equipment (Net)	54,967.25	308,765.21	363,732.46
Total Freight	$2,463,388.68	$13,837,342.63	$16,300,731.31
Passenger Revenue	$1,750,522.02	$1,890,105.43	$3,640,627.45
Miscellaneous Passenger Earnings	335,754.66	362,526.79	698,281.45
Passenger Earnings	$2,086,276.68	$2,252,632.22	$4,338,908.90
Outside Operations (Net)	44,546.91	48,098.96	92,645.87
Rentals and hire of equipment (Net)	47,617.31	51,414.18	99,031.49
Total Passenger	$2,178,440.90	$2,352,145.36	$4,530,586.26
Total of all Earnings	$4,641,829.58	$16,189,487.99	$20,831,317.57
Freight operating expenses	$1,464,629.87	$6,676,725.74	$8,141,355.61
Taxes	99,761.00	560,383.19	660,144.19
Total	$1,564,390.87	$7,237,108.93	$8,801,499.80
Passenger operating expenses	$1,960,215.07	$1,709,843.67	$3,670,058.74
Taxes	86,421.46	93,312.46	179,733.92
Total	$2,046,636.53	$1,803,156.13	$3,849,792.66
Total of all Operating Expenses and Taxes	$3,611,027.40	$9,040,265.06	$12,651,292.46
Total income from all business in Minnesota applicable to valuation	$1,030,802.18	$7,149,222.93	$8,180,025.11
Valuation apportioned on earnings basis	30,685,833.00	107,739,458.00	138,425,291.00
Annual return	3.359%	6.636%	5.909%

NOTE: The above computations do not take into consideration the loss that would have accrued on Minnesota Intrastate commodity business by application of the rates under litigation, amounting to $87,261.43, nor a loss of $208,923.43, that would have accrued on Interstate commodity business in Minnesota.
(Ex. 22, 24, 26 and 28-Parker, Vol. 6 G. N.)

(P. 270, Vol. 1 N. P.)

MINNEAPOLIS & ST. LOUIS, FISCAL YEAR ENDED JUNE 30, 1907 AND 1908.

Earnings from Operation	$3,873,668.35
Operating Expenses	$2,380,506.80
Taxes	176,624.58
Total	$2,557,131.38

(See Complts. Ex. 33 Scott, Section A, Vol. 6, M. & St. L.)

IN MINNESOTA AS FOUND BY THE MASTER.

	Intrastate	Interstate	Total
Freight Revenue	(1) $534,696.66	$1,180,155.91	$1,714,852.57
Miscellaneous Freight Earnings	1,151.55	2,541.67	3,693.22
Freight Earnings	$535,848.21	$1,182,697.58	$1,718,545.79
Other Income (Net)	21,369.71	47,162.69	68,532.40
Total Freight	$557,217.92	$1,229,860.27	$1,787,078.19
Passenger Revenue	(2) $352,008.52	$298,258.28	$650,266.80
Miscellaneous Passenger Earnings	60,474.43	51,246.29	111,720.72
Passenger Earnings	$412,482.95	$349,504.57	$761,987.52
Other Income (Net)	14,063.74	11,918.26	25,982.00
Total Passenger	$426,546.69	$361,422.83	$787,969.52
Total of all Earnings	$983,764.61	$1,591,283.10	$2,575,047.71
Freight operating expenses	$321,534.25	$709,685.27	$1,031,219.52
Taxes	28,143.70	62,112.81	90,256.51
Total	$349,677.95	$771,798.08	$1,121,476.03
Passenger operating expenses	$283,303.41	$240,072.56	$523,375.97
Taxes	18,521.77	15,696.24	34,218.01
Total	$301,825.18	$255,768.80	$557,593.98
Total of all Operating Expenses and Taxes	$651,503.13	$1,027,566.88	$1,679,070.01
Total income from all Minnesota business applicable to valuation	$200,903.18 (*ibid.* 280)	$563,716.22	$764,619.40
Valuation apportioned on earnings basis	$8,101,013.00	$13,507,451.00	$21,608,464.00
Annual return	(3) 2.47%	4.17%	3.53%

(NOTE 1: If the freight rates complained of had been in effect during all of the year ended June 30, 1907, the intrastate freight revenue would have been thereby reduced $64,314.96.) (See p. 278-279, Vol. 1 N. P.)

(NOTE 2: If the intrastate passenger fares complained of had been in effect during the whole of the fiscal year ended June 30, 1907, the intrastate passenger revenue would have been thereby reduced $67,043.34.) (*ibid.* p. 280).

(NOTE 3: The percentage 2.47 annual return on the intrastate business was arrived at by dividing the freight operating expenses and the passenger operating expenses between intrastate and interstate business respectively, on a straight revenue basis, and the Master found that such basis "does not assign to either class of such intrastate business the full amount of operating expenses which was actually expended in the conduct thereof," and consequently the rate of return on value for the total intrastate business is in excess of the actual return which would have been earned if the rates complained of had been in effect during the whole of the fiscal year.) Defendants' Exhibit L, Table 14, Vol. 5 M. & St. L. Case shows the percentage of operating expenses to revenue for the fiscal year ended June 30, 1908 to be 70.80%. Taxes were 4% making 74.80%. (*ibid.* 280.)

(NOTE 4: The percentage of operating expenses and taxes to revenue year ending June 30, 1908 were, as shown by Exhibit 33 Scott, Sect. A, vol. 6 M. & St. L. Case 73.6%.

system. Passengers carried one mile on the system were 493,082,382 (Ex. 53 Ward, Vol. 6 G. N.). Intrastate passengers in Minnesota carried one mile were 92,053,657, or 18.6 per cent.

It will be observed that the volume of the Minnesota intrastate business compared with the volume of the business on the system of each of these companies is relatively small. It is also apparent that the intrastate business alone would not justify the building of the lines of these companies in Minnesota, or yield enough revenue—at rates at all reasonable—to pay for the conduct of the business and the maintenance of lines of railway necessary to conduct it, leaving out of account altogether, compensation to the owners for the use of their property.

Tables showing System Earnings, Expenses and Taxes as shown by the annual report and also Earnings, Operating Expenses, Taxes and Rates of Return on property valuation from all intrastate business and from all interstate business, as found by the Master, follow:

Earnings, Operating Expenses, Taxes, and Percentages of Earnings Consumed by Operating Expenses and Taxes.

Rate of Annual Return on All Business, Intrastate Business and Interstate Business in Minnesota, as Found by the Master.

The amounts of revenue from operation, operating expenses and taxes on each of the systems and in Minnesota are shown on the opposite tables:

System Operating Percentages.

The figures appearing on the foregoing tables relating to the *system* results were taken from the uncontradicted evidence and the remainder from the Master's Report, as indicated above. From these figures it appears that on the whole system of each road, the operating expenses and taxes consumed of the total receipts from operation, the following percentages:

Northern Pacific.....61+ per cent.
Great Northern.....70+ per cent.
Minneapolis & St. Louis.....73+ per cent.

(The foregoing percentage was arrived at in each case by dividing the sum of the operating expenses and taxes on the system by the gross revenues from operation on the system, as indicated in the report of each company above referred to.)

Minnesota Operating Percentages.

According to the Master's findings, the operating expenses and taxes chargeable to Minnesota consumed of the total operating revenue in Minnesota or chargeable thereto, the percentage indicated for each company below:

Northern Pacific.....60.3 per cent.
Great Northern.....60.7 per cent.
Minneapolis & St. Louis.....65.2 per cent.

Minnesota Intrastate Operating Percentages, Freight and Passenger Taken Together.

The operating expenses and taxes chargeable to the total Minnesota intrastate business consumed of the total receipts chargeable thereto the percentage indicated for each company below:

Northern Pacific.....80.5 per cent.
Great Northern.....77.7 per cent.
Minneapolis & St. Louis.....76.4 per cent.

These percentages may be calculated from the Master's Report as follows:

(1) For the above stated percentages on all business in the State, divide the sum of Minnesota operating expenses plus the taxes by the Minnesota gross earnings of all kinds from operation in or chargeable to the State.

Note: There is no controversy between the parties as to the factors entering into the calculations as to the total business within the State.

(2) For the above stated percentages on the Minnesota intrastate business, divide the sum of the operating expenses plus the taxes chargeable thereto by the total receipts of all kinds from operation earned in or chargeable to such business.

Note: We know of no controversy between the parties as to the amount of earnings or the amount of taxes chargeable to such intrastate business. There

is controversy as to the amount of operating expenses so chargeable.

(For the findings as to the Northern Pacific case, see Table attached to p. 264, Vol. 1 N. P.; for the findings as to the Great Northern case, see Table attached to p. 270, Vol. 1 N. P.; for the findings as to the Minneapolis & St. Louis case, see p. 278-280, Vol. 1 N. P.)

Extra Cost of Intrastate Business Over the Average Cost of All Minnesota Business.

If we subtract in each case respectively the above stated percentage of earnings in Minnesota consumed by operating expenses and taxes *in Minnesota* from the percentage of the the total *intrastate earnings in Minnesota* consumed by the operating expenses and taxes chargeable thereto, the remainder in each case will be the extra cost chargeable to the intrastate business (including both freight and passenger) over and above the cost chargeable to the *total business* in Minnesota.

Such percentages of extra cost are as follows:

Extra Cost Percentages.

Percentage of Operating Expenses and Taxes to Earnings on All Business Compared with Minnesota Intrastate Business.

	All Business.	All Intrastate Business.	Extra Cost.
N. P.	60.3%	80.5%	20.2%
G. N.	60.7%	77.7%	17.0%
M. & St. L.	65.2%	76.4%	11.2%

These percentages are on the same basis as the similar percentages stated in *Ames v. Union Pacific*, 64 Fed. 165; *Smyth v. Ames*, 169 U. S. 466; and *Keyes v. Northern Pacific*, 91 Fed. 47.

In the cases cited, however, the rates complained of had not been put into effect at the time the calculations were made.

In these cases, the merchandise rates prescribed by the Orders of September 6, 1906, and of May 3, 1907, and the Two Cents Passenger Fare Law (Chapter 97, Laws 1907) were in effect during all of the year ended June 30, 1908, on the business of which the Master made his detailed calculations in the Northern Pacific and Great Northern cases, and such rates were in effect during a part of the fiscal year ended June 30, 1907, on the business of which the Master made his detailed calculations in the Minneapolis & St. Louis case.

In *Ames v. Union Pacific, supra*, the percentage of operating expenses to earnings was shown for each road by Exhibit 20 printed on page 180 of the opinion.

At page 184 of the opinion, it is said:

> "But the testimony shows that the cost of carrying the *local freight* is largely in excess of the cost of *other business*. The exact percent of such excess is not disclosed. It may, perhaps, be difficult to determine it accurately. Mr. Fink, a witness for the plaintiffs—a gentleman of large experience in railroad transportation, and of national reputation as an authority in such matters—says that the cost of *carrying local freight is four times that of carrying through freight*.
>
> Mr. Utt, another witness for the plaintiffs, who is the commissioner employed by the Commercial

Club of Omaha to look after railroad transportation matters affecting the business of the city, testifies that the *one costs six times as much as the other;*

While Mr. Dilworth, the Secretary of the defendant Board and their principal witness on matters of this kind also says that it costs more to do *local* than *through* business;

That the percentage of operating expenses on the local business would exceed the percentage on all business probably 10% and might run up to 20%—possibly, might be higher than that.

Of course this testimony is not like that which we have heretofore been examining, where the figures and per cents are accurate and certain, but is largely in the way of estimate. And yet it is clear from the testimony that the per cent of expenses for carrying local freight is considerably above the *total per cent* of operating expenses."

Defendants, before the Master and the Circuit Court, contended that the phrase "local freight," as used in the opinion of Justice Brewer in the Ames case, just cited, did not mean *intrastate freight,* but only the freight which was hauled on "local trains"; that is, trains doing business from station to station, as distinguished from through trains running from one division terminus to the other, without doing any business at the stations between the termini.

It was defendants' contention below, and we presume that they will claim here, that only so much of the intrastate freight business as is moved on such "local trains" is attended by any extra cost, that a considerable portion of the intrastate business is moved on through trains, and that therefore the extra cost of the intrastate business over the cost of all business —or over the cost of the interstate business,—as found

by the Master and the Circuit Court, is excessive in these cases; and it is claimed that the "extra cost," as found by the Circuit Court (Justice Brewer and Judge Dundy) and by this Court in the Ames case, *supra*, and by the Circuit Court (Judge Thayer and Judge Amidon) in the Keyes case, *supra*, was intended in each instance to apply only to the business moved on "local" or peddling trains aforesaid, and that some of the traffic moved on such trains is interstate business.

We say:

(1) That the elements of "extra cost" are not confined to that part of the intrastate freight business which is moved by local trains.

Note.—It is apparent that only a relatively small portion thereof on the lines of the Northern Pacific and the Great Northern roads could be hauled on other than such local trains, because the average length of the haul is less than an "engine run" or divisional distance. (Hereafter this subject will be more fully considered.)

(2) And appellants have clearly misunderstood and attempted to misapply these decisions.

That this understanding of the language of the court in that case is erroneous is made plain by a reading of the decision in its entirety. We call attention to the following, at page 179 of the opinion:

> "There are certain matters which embarrass these cases, and render all computations more than ordinarily difficult. One is this: The various companies are doing an *interstate* as well as a *local* business.
>
> If these roads were wholly within the State, and only *local* business done by them, the compu-

> tation would be much simplified, and the effect of the reduction in rates upon the property more easily disclosed. But all of these roads are *interstate* roads, and a large portion of their business is interstate business. Some of it is *local* business in other States than Nebraska.
>
> Now, it will not do to look simply at the *gross earnings,* and, because the reduction therein made by the enforcement of this statute still leaves enough to pay reasonable compensation to the owners of the property, uphold the act, because, if the legislature of Nebraska can put in force this tariff for *local business,* the legislatures of other States through which these roads run, and the Congress of the United States, may make corresponding reductions in the rates on all other business, *local and interstate,* and the aggregate of such reductions might entirely destroy all earning capacity from the property."

The phrase "tariff for local business" or the phrase "rates on all other business, local and interstate" cannot be read as having reference to the class of train, i. e., "through train" or "local train", by which the traffic is moved.

The court further said:

> "We have an attempt by the legislature to prescribe a maximum tariff for only the *transportation of freight within the limits of Nebraska,* and are called upon to determine whether the rates so fixed are unreasonable, and afford no fair compensation to those who have invested their means in these railroad properties.
>
> In order to determine this, we must ascertain what it costs to carry this *local freight, what the receipts have been therefrom,* and what reduction will be made in such receipts by the application of this act, and then we must take such proportion of the gross investment in the roads as the

present earnings from local freights bear to the total earnings of the road. From these computations, we may see whether the reduction made by this act in the local freights, if applied to all the company's business, would leave any compensation to the owners, and, if so, how much."

Note.—It will be observed that the court here indicated that the apportionment of value to the business covered by the rates complained of, should be made on the basis of earnings; that is, by taking "such proportion of the gross investment in the roads as the present earnings from local freights bear to the total earnings of the road."

The clause above quoted from the opinion, namely, "we must ascertain what it costs to carry this local freight, what the receipts have been therefrom * * *", and the phrase "earnings from local freights bear to the total earnings of the road" cannot refer to the kind of train which moves the business, but clearly the phrase "local freights" was used by the court to mean the intrastate freight business in Nebraska.

Again, it will be observed that Exhibit 20, a table printed on page 180 of the opinion, contrasts "No. of Tons Carried Locally" with "No. Tons of Interstate Freight Carried", and contrasts "No. Tons of Local Freight Carried 1 Mile" with "No. of Tons of Interstate Freight Carried 1 Mile", and also gives the total of the ton miles in a column under the caption "Total No. of Tons, Local and Interstate, Carried 1 Mile", and also gives figures in a column under the caption "No. of Passengers, Local and Interstate, Carried 1 Mile."

The defendants' Exhibit 4, printed on page 181 of the opinion, also indicates clearly that the word "local"

was used as the equivalent of *intrastate,* and in that exhibit the word "through" is used as the equivalent of interstate.

The table printed on page 183 of the opinion also uses the phrase "local freight" as meaning intrastate freight.

Again, at page 188 of the opinion, it is said:

> "* * * It may be true, as testified by some of the witnesses, that the existing *local rates* in Nebraska are 40% higher than similar rates in the state of Iowa."

The expression "local rates" clearly means intrastate rates.

In *Smyth v. Ames, supra,* it is clear that the phrase "local business" and similar phrases were used as the equivalent of intrastate freight business in Nebraska.

In the report of Mr. Woolworth's argument for appellees, at page 499 and 500 of Vol. 169, appear two tables, Table 1 showing the percentage of expenses to earnings. For illustration, we quote the captions of each column and the first line of Table 1:

"Name of Road.	Reductions by the bill.	Cost of doing all business.	Extra cost of local business.	Total.
B. & M.....	29.50	66.24	10	105.74"

and also the captions of each column and the first line of Table 2, on page 500:

"Name of Road.	Total amount received for tons carried locally.	Total amount of reduction caused by H. R. 33.	Expenses of all business.	10% for extra cost of local business.	Total deductions.	Gain or loss.
B. & M..	1,066,871	314,726	706,695	106,687	1,128,108	-61.237"

This court, speaking through Mr. Justice Harlan, at page 528 of the opinion said:

> "The conclusion reached by the Circuit Court was that the reduction made by the Nebraska statute in the rates for local freight was so unjust and unreasonable as to require a decree staying the enforcement of such rates against the companies named in the bill. *Ames v. Union Pacific Railway*, 64 Fed. Rep. 165, 189.
>
> That conclusion was based largely upon the figures presented by Mr. Dilworth, while he was a secretary of the State Board of Transportation, as well as a defendant and one of the solicitors of the defendants in these causes. He was a principal witness for that Board. His general fairness and his competency to speak of the facts upon which the question before us depends are apparent on the record. He stated that the average reduction made by the statute on all the 'commodities of local rates' was 29.50 per cent; and this estimate seems to have been accepted by the parties as correct.
>
> He estimated that the *percentage of operating expenses on local business* would exceed the *percentage of operating expenses on all business* by at least *ten per cent*, and that it might go as high as twenty per cent or higher.
>
> And this view *is more than sustained* by the evidence of witnesses possessing special knowledge of railroad transportation and of the cost of doing local business as compared with what is

called through business. Indeed, one of those witnesses states that the cost of carrying *local freight is* four times as much as the cost of *through freight* per ton per mile; another, that the cost of the short haul is *'reasonably double the long haul.'*

If due regard be had to the testimony—and we have no other basis for our judgment—we are not permitted to place the extra cost of *local business* at less than ten per cent greater than the percentage of the cost of all business."

Exhibit 4, printed at page 530 of the opinion, uses the phrase "number of tons hauled locally" as meaning the number of tons hauled in the intrastate freight business in Nebraska. Exhibit 19, at page 531, and Exhibit 20, at page 532, use the same phrase, namely, "Number of tons carried locally", as meaning the number of tons carried in the intrastate business in Nebraska.

And the matter is put beyond doubt by the language of the court at page 533, where it is said:

"It may be here stated that the words in these exhibits, 'number of tons hauled locally,' refer to freight that started and ended in the State; the words in Exhibit 4, 'amount received for freight hauled in Nebraska, including through and local,' and the like words in Exhibit 19, refer not only to freight starting and ending in the State, but to all freight hauled by the railroad company in Nebraska, regardless of its destination or origin—that is, 'freight that begins in the State and goes out of the State, freight that begins out of the State and comes into the State and freight which begins and ends in the State.' The words, 'per cent of reduction on all the business done in the State by House Roll 33,'

in Exhibits 4 and 19, mean the percentage of the total amount of all business, passenger and freight, done in the State, whatever its origin or destination, and do not indicate the percentage of reduction on local business when considered alone.

It should be stated also that the words, 'percentage of expenses to earnings,' in Exhibit 20, refer to all business, through and local, done by the railroad company within the State. Mr. Dilworth, as we have seen, testified that if the *local* business alone were considered, the percentage of expenses to earnings upon such business would be at least ten per cent more than the general percentage of expenses to earnings on *all business, both through and local.*"

And that the figures derived from the findings of the Master in these cases, which are above given, are on a basis exactly equivalent to that employed by this court in the Table which is a part of the opinion and printed on page 536 of the report, will be made clearly to appear by quoting the captions and first line of that Table. They are as follows:

"Name	Cost by percentage of all business.	Extra Cost of local business.	Total Cost of local business.	Earnings as reduced by Act of 1893.	Loss.	Gain.
1891 Burlington Company..	66.24	10	76.24	70.50	5.74"	.....

The opinion (page 533-536) shows the method employed to arrive at the figures given in the table. It was this:

The percentage of expense to earnings on the Burlington road was found to be 66.24 per cent.

The reduction by H. R. 33 was found to be 29.50 per cent.

The extra cost of doing local business was found to be *at least* ten per cent over the percentage of expense to earnings on *all* business, or 76.24 per cent.

The reduction of $29.50 on each $100 left only $70.50, as against the $100 before the reduction.

In other words, operating expenses exceeded earnings, *on the basis of the reduced rates*, $5.74 in every $100 of the amount which would have been received under the reduced rates.

By another table, at page 538 of the opinion, are shown:

(1) Total amount received for tons carried locally.

(2) Total amount of reduction by the Act of 1893, 29½ per cent.

(3) What would have been received under rates fixed by the Act of 1893.

(4) Amount to be deducted to pay expenses (reckoned by per cent of cost of all business).

(5) Amount taken out of earnings to pay 10 per cent of extra cost of local business.

(6) Total expense of local business.

(7) Gain.

(8) Loss.

In the cases at bar the Master's calculations are essentially on the same basis as the two tables last referred to, at pages 536 and 538 of the opinion respectively, and his determinations furnish data for the exact reproduction in form of the tables employed in the opinion in that case.

In *Northern Pacific v. Keyes*, 91 Fed. 47, the Circuit Court, at page 50, incorporated a table, the captions and first line of which are as follows:

	"Ton Miles Local to the State.	Ton Miles Originating or Terminating in the State.	Ton Miles Entirely Across the State.	Total Interstate.
1894.....	3,170,863	106,976,389	93,989,336	200,965,725"

This table was for the purpose of showing the relative volume of intrastate business in North Dakota to the total volume therein, just as was shown in the Northern Pacific and Great Northern cases at bar by Exhibit 80 Elliott, Vol. 10 N. P. case, and Exhibit 53 Ward, Vol. 6 G. N. case, respectively, as hereinbefore shown.

It is clearly impossible that the phrase "ton miles local to the State" had reference to the class of train which moved the traffic, as was contended below by the defendants, because it was used in contrast with "total interstate." The whole opinion in the case makes it clear that the factor of extra cost, hereinafter referred to, charged to the "local business," was plainly and manifestly intended to cover all intrastate business in North Dakota.

The issues in that case were the same in kind as some of the issues presented in the cases at bar. Conditions affecting the cost of transportation in North Dakota and in Minnesota are much alike.

The distance tariff then in force was the same in North Dakota as in Minnesota, and much lower in those States than in Montana and states farther west. (p. 52 of the opinion.)

The railroads then had a special merchandise tariff on business out of Fargo and Grand Forks, which was substantially the same as the terminal merchandise tariff out of St. Paul, Minneapolis and Duluth. (p. 52 of the opinion.)

The schedule there complained of was a distance tariff, and prescribed rates for all distances between one mile and 400 miles, and took no account of the volume of the business, but applied the same rule to the smallest way stations as to terminal stations. (p. 52.)

In the cases at bar, the Commission's order, as hereinbefore stated, fixed maximum rates on the basis of distance to or from specified terminals, and permitted a slight increase for transportation between stations, neither of which was a terminal station. In other words, the schedule is a distance tariff, making a slight differential in favor of certain specified points. The Commodity Rates Act (Chapter 232, Laws 1907), covering grain of all kinds, livestock of all kinds, lumber, etc., and hard and soft coal, is a distance tariff, and prescribes rates for all distances up to 400 miles, and takes no account of the volume of the business, and applies to all railroads in the State, whether weak or strong.

In the North Dakota case, the rates complained of reduced existing rates below corresponding rates in Minnesota, and lower than the terminal tariffs out of Fargo and Grand Forks, with the exception of those on grain, mill stuffs, etc., and as to those they were but slightly higher. None of these considerations was deemed decisive of that case, but it was held that:

"* * * they do tend to throw a strong indirect light upon the primary question under consideration. It is a self-evident proposition that these railroads cannot maintain lower rates for local business in North Dakota than in Minnesota; much less can they maintain for the strictly domestic commerce of that state, which moves in light volume, for short distances, and in small shipments, lower rates than are charged for interstate traffic, which has more than fifty times its volume, is moved more than four times its distance, and is hauled chiefly by car loads and train loads.

The result is that one of two propositions must be true. Either the rates fixed by the commission are unreasonably low, or the interstate rates charged by the plaintiffs are grossly excessive; for, if local rates ought to be placed below existing interstate rates, then the latter rates, owing to the volume and character of the traffic, ought, in justice, to be correspondingly reduced." (p. 52.)

The language above quoted applies with much force to the situation presented in the cases at bar.

It is certainly impossible—whether lawful or not—for these railroad companies to maintain intrastate freight or passenger rates in Minnesota on a lower basis than the corresponding interstate rates therein. If the former be reduced, reductions of the latter must follow. That the interstate rates in Minnesota are not too high is abundantly shown by the results of operation, as determined by the Master; and that the intrastate rates before the reduction were relatively fair, as compared with the interstate rates, is not denied by anyone. That the purpose of the exercise of the authority of the State was not to equalize, but to make sweeping reductions of all rates within its

jurisdiction, is shown by the fact that all rates were reduced in substantially like degree, and especially by this provision in the law (Sec. 7, Chapter 232, Laws 1907), as follows:

> "If at the time of the taking effect of this act any railroad is maintaining a rate between any two stations in this state that is less than the rate herein prescribed for the same distance, this act shall not be construed as authorizing the raising of such rate." (p. 25, Vol. 1 N. P.)

Elsewhere herein it is shown:

(a) That the intrastate rates existing immediately before the reductions complained of were not relatively too high.

(b) That the rates in effect immediately before such reductions were not higher than the fair and reasonable value of the services covered thereby.

(c) That all of the systems in Minnesota were wisely and judiciously located, in obedience to an urgent public demand for railway service; that the same have been economically and most efficiently operated, enabling the companies, voluntarily and in obedience to demand of public authority, from time to time, over a long period and including recent years, to greatly reduce the rates and fares charged for transportation of freight and passengers, notwithstanding enormous advances in the cost, especially during the last twelve or fifteen years, of labor and material required to operate the roads.

Therefore, we contend that each of these companies is entitled to apply such rates upon its intrastate business in Minnesota as will yield a full and fair return

upon the value of the property used, at the time that it is used, to render the services covered by the rates complained of.

One of the necessary steps in these cases was to show the cost of doing the intrastate business in Minnesota. The operating expenses were incurred upon the system as a whole. The companies, as a matter of routine accounting, in order to ascertain the cost of doing all business in Minnesota, and of the freight business and of the passenger business in Minnesota, divided the total operating expenses:

(a) Between states, by allocating to each state the amount of expense incurred therein, and dividing items of expense incurred for the common benefit of the business in Minnesota and elsewhere on certain bases, not necessary to be here enumerated, *because it was not disputed at the trial that such division was right. Indeed, the defendants' expert witness found it to be right.*

(b) Between the freight department and the passenger department in each state, on bases universally recognized among railroad accountants as right, and which were once prescribed by the Interstate Commerce Commission.

It was shown by an abundance of proof on the part of the complainants, that there is no known method of accounting by which the cost of doing any item or class of business can be separately kept or stated.

On the trial, it was necessary for the complainants to make a division of the operating expenses in Minnesota—between the interstate business and the intrastate business therein.

In the Keyes case, *supra*, this subject was carefully considered, and material facts related to such division were so clearly and plainly stated that we feel justified in referring to that part of the opinion at considerable length. The court said, at page 52:

> "The fundamental question in all cases like these is, will the rates prescribed by the state pay the expense of doing the local business, and leave to the carrier a reasonable compensation upon the fair value of the property which it employs in performing the service?
>
> Certain of the factors necessary to a determination of this question are capable of definite knowledge; others must forever rest largely upon opinion. The income derived by the carrier from the business which it conducts within the state can be ascertained accurately from the records of the company, *but the expense of doing that business is not susceptible of mathematical ascertainment.* Many of its items apply equally to local and interstate business. The different kinds of traffic are often carried in the same train, and not infrequently in the same car.
>
> It is absolutely impossible to divide the cost of traffic thus moved, and say that this amount should be attributed to local business and that amount to interstate.
>
> It is possible, however, to ascertain the relation of the cost of doing the entire business of a railroad to its gross income. These amounts are shown by the books of the company in dollars and cents, and furnish the basis from which all investigation as to the cost of doing local business must start."

In the cases at bar, there is no controversy as to the total amount of operating expenses chargeable to Minnesota. The defendants do not claim that a suf-

ficient amount of earnings has not been credited to Minnesota. There is no controversy between the parties as to the total amount of receipts credited to the intrastate business, freight or passenger, in Minnesota.

Classification of Operating Expenses by the Interstate Commerce Commission.

The operating expenses appear upon the books of each company substantially in accordance with the classification prescribed by the Interstate Commerce Commission under the authority of the Act to Regulate Commerce. The operating expenses, according to that classification, are divided into the following general accounts:

I. Maintenance of way and structures.
II. Maintenance of equipment.
III. Traffic expenses.
IV. Transportation expenses.
V. General expenses.

These general accounts are divided into primary accounts as follows:

I. Maintenance of Way and Structures.

1. Superintendence.
2. Ballast.
3. Ties.
4. Rails.
5. Other Track Material.
6. Roadway and Track.
7. Removal of Snow, Sand, and Ice.
8. Tunnels.
9. Bridges, Trestles, and Culverts.
10. Over and Under Grade Crossings.
11. Grade Crossings, Fences, Cattle Guards, and Signs.

12. Snow and Sand Fences and Snowsheds
13. Signals and Interlocking Plants.
14. Telegraph and Telephone Lines.
15. Electric Power Transmission.
16. Buildings, Fixtures, and Grounds.
17. Docks and Wharves.
18. Roadway Tools and Supplies.
19. Injuries to Persons.
20. Stationery and Printing.
21. Other Expenses.
22. Maintaining Joint Tracks, Yards, and Other Facilities—Dr.
23. Maintaining Joint Tracks, Yards, and Other Facilities—Cr.

II. Maintenance of Equipment.

24. Superintendence.
25. Steam Locomotives—Repairs.
26. Steam Locomotives—Renewals.
27. Steam Locomotives—Depreciation.
28. Electric Locomotives—Repairs.
29. Electric Locomotives—Renewals.
30. Electric Locomotives—Depreciation.
31. Passenger-Train Cars—Repairs.
32. Passenger-Train Cars—Renewals.
33. Passenger-Train Cars—Depreciation.
34. Freight-Train Cars—Repairs.
35. Freight-Train Cars—Renewals.
36. Freight-Train Cars—Depreciation.
37. Electric Equipment of Cars—Repairs.
38. Electric Equipment of Cars—Renewals.
39. Electric Equipment of Cars—Depreciation.
40. Floating Equipment—Repairs.
41. Floating Equipment—Renewals.
42. Floating Equipment—Depreciation.
43. Work Equipment—Repairs.
44. Work Equipment—Renewals.
45. Work Equipment—Depreciation.
46. Shop Machinery and Tools.
47. Power Plant Equipment.

48. Injuries to Persons.
49. Stationery and Printing.
50. Other Expenses.
51. Maintaining Joint Equipment at Terminals —Dr.
52. Maintaining Joint Equipment at Terminals —Cr.

III. Traffic Expenses.

53. Superintendence.
54. Outside Agencies.
55. Advertising.
56. Traffic Associations.
57. Fast Freight Lines.
58. Industrial and Immigration Bureaus.
59. Stationery and Printing.
60. Other Expenses.

IV. Transportation Expenses.

61. Superintendence.
62. Dispatching Trains.
63. Station Employees.
64. Weighing and Car-Service Associations.
65. Coal and Ore Docks.
66. Station Supplies and Expenses.
67. Yardmasters and their Clerks.
68. Yard Conductors and Brakemen.
69. Yard Switch and Signal Tenders.
70. Yard Supplies and Expenses.
71. Yard Enginemen.
72. Enginehouse Expenses—Yard.
73. Fuel for Yard Locomotives.
74. Water for Yard Locomotives.
75. Lubricants for Yard Locomotives.
76. Other Supplies for Yard Locomotives.
77. Operating Joint Yards and Terminals—Dr.
78. Operating Joint Yards and Terminls—Cr.
79. Motormen.
80. Road Enginemen.

81. Enginehouse Expenses—Road.
82. Fuel for Road Locomotives.
83. Water for Road Locomotives.
84. Lubricants for Road Locomotives.
85. Other Supplies for Road Locomotives.
86. Operating Power Plants.
87. Purchased Power.
88. Road Trainmen.
89. Train Supplies and Expenses.
90. Interlockers, Block and Other Signals—Operation.
91. Crossing Flagmen and Gatemen.
92. Drawbridge Operation.
93. Clearing Wrecks.
94. Telegraph and Telephone—Operation.
95. Operating Floating Equipment.
96. Express Service.
97. Stationery and Printing.
98. Other Expenses.
99. Loss and Damage—Freight.
100. Loss and Damage—Baggage.
101. Damage to Property.
102. Damage to Stock on Right of Way.
103. Injuries to Persons.
104. Operating Joint Tracks and Facilities—Dr.
105. Operating Joint Tracks and Facilities—Cr.

V. General Expenses.

106. Salaries and Expenses of General Officers.
107. Salaries and Expenses of Clerks and Attendants.
108. General Office Supplies and Expenses.
109. Law Expenses.
110. Insurance.
111. Relief Department Expenses.
112. Pensions.
113. Stationery and Printing.
114. Other Expenses.

115 General Administration Joint Tracks, Yards and Terminals—Dr.
116. General Administration Joint Tracks, Yards and Terminals—Cr.

The State Railroad and Warehouse Commission of Minnesota had authority, under the laws of the state, to prescribe the forms of annual reports required to be made by railroad companies to the Commission, but it had never undertaken to indicate any basis for the division of operating expenses within the state between the freight business and the passenger business, or the intrastate and interstate of either, apparently recognizing the impossibility of prescribing any system of accounting to show the cost of intrastate business, either freight or passenger.

These companies, however, as a matter of routine accounting, for the purpose of ascertaining, with as much accuracy as possible, the cost of doing all freight business in the state, and the cost of doing all passenger business in the state, divided the total operating expenses in the state between the freight department and the passenger department, by allocating to each directly, the items of expense incurred in that department, amounting in the aggregate to about 60 per cent of the total, and divided each item of common expense between the two departments, either upon the train mileage basis or the engine mileage basis, as hereinbefore referred to.

All items of operating expenses incurred in the freight business within the state are common between the intrastate business and the interstate business therein, and all items of operating expenses incurred in the

performance of the passenger business in the State are common between the intrastate business and the interstate business therein. There is no way, consistent with railroad operation, of incurring expenses separately in either class.

The reported decisions show that all courts have considered an arithmetical division of expenses between the intrastate business and the interstate business utterly impossible, because of the common use of labor and instrumentalities in the performance of both classes of service, and that, by reason of conditions varying from day to day on different roads, on the same road, and on different parts of the same road, no method of accounting can be contrived to show the cost of the intrastate business or of the interstate business in any State. But it has been recognized by all the courts that the *relation* of such costs may be established by the opinions of men familiar with the operation of the particular road, to a satisfactory degree of certainty.

In the Keyes case, *supra*, it was said, at page 53:

> "The operating expenses of a railroad consist of two principal items: (1) Cost of maintenance of plant; (2) cost of conducting transportation."
>
> "The former item is constant, and can justly be divided between the different kinds of traffic in proportion to their volume. As to the second item, however, such a division cannot properly be made; for it is agreed, by all who have had occasion to consider the subject, railroad commissioners as well as railroad officials, that the cost of conducting transportation is, *relative to income*, much higher for local business than for the gen-

eral business of a road. The causes of this added cost are chiefly three: (1) The shortness of the haul; (2) the lightness of the train loads; (3) expense of billing and handling the traffic.

The evidence shows that the average haul on local business in North Dakota is between 80 and 90 miles, while the average haul on the entire business of the roads is from 350 to 500 miles. There is no principle of railroading that is better established than that the cost of doing business rapidly decreases as the length of haul increases; that is, if you double the distance you do not double the cost.

This is recognized by the defendants the same as by complainants. For example, the rate fixed by the commission on grain per 100 pounds for 100 miles is 9 cents, while for 380 miles it is 18 cents. Thus, while the length of haul is increased nearly four times, the rate has only doubled.

Another element of added cost is the lightness of the load. The evidence clearly shows two things: First, that the trains in which the local business is done do not average more than one-half as many cars as those in which the general traffic of the roads is carried; second, that the cars carrying local traffic are only loaded at from one-tenth to one-half of their capacity. Many of the items of expense in conducting traffic are constant, whether the train is large or small; whether the cars are fully or lightly loaded. The carrier furnishes the power, the vehicle, and the trainmen to do the business. If a train which is capable of hauling 1,000 tons gets only 100 tons to haul, the relative cost of moving the traffic to the revenue which it produces is increased nearly tenfold. This matter was aptly illustrated by one of the witnesses, who compared it to the raising of wheat. The expense of raising an acre of wheat is substantially the same whether the yield be 10 or 30 bushels, but the cost per

bushel in the one case is approximately three times as great as in the other.

The third item mentioned is the extra expense of billing and handling local traffic. It costs as much to bill and pass through the records of the company a box of merchandise paying a freight charge of 50 cents as it does to perform the same service for a car load of wheat paying a revenue of $75.

Furthermore, the great volume of traffic is loaded by the shipper and unloaded by the consignee while local freight has to be stored, loaded and unloaded by the carrier.

There are many other minor items of extra expense, which were mentioned by the witnesses on behalf of plaintiffs, to which we do not deem it necessary to advert.

Counsel for defendants makes some point of the fact that the same trains that do local business also collect and distribute interstate freight. That, however, is not important. The amount of interstate traffic that is of this parcel character is but trifling when compared with the entire volume, whereas nearly all the local freight in North Dakota is of that kind. All traffic which moves in small shipments for short distances is burdened with a heavy expense *in proportion* to its income; but if in any class of business the amount of such traffic is small in comparison with the entire volume, as it is in the case of interstate traffic, its effect upon the proportion of cost to revenue for the entire class is slight, whereas if the traffic is mainly of that character, as in the case of local business in North Dakota, its effect becomes controlling."

The conditions adverted to in the *Keyes case* are strikingly similar to those shown in this record. For example, in that case, the rate on grain for 100 miles was 9 cents, and for 380 miles, 18 cents.

Chapter 232, complained of, fixes the rate on wheat, etc., for 100 miles at only 7.8 cents; at 380 miles, 11.8 cents. The rates in Minnesota are lower, and whereas the 100 mile rate was doubled at a distance of 380 miles in North Dakota, the Minnesota 100 mile rate complained of is increased only about 50 per cent.

This rate, however, was never applied. The present rates on wheat and coarse grain on the Northern Pacific for 100 miles is 8 cents; for 400 miles, 16 cents. (See Exhibit 44 Baird, Vol. 10 N. P.) While these rates are lower than the rates enjoined in North Dakota, the relation between the rates for such different distances is *substantially the same*. That is to say, the Commission of North Dakota, by its schedule which was enjoined, indicated its opinion that the rate for 380 miles ought to be twice as much as the rate for 100 miles. The schedule *now in effect on the Northern Pacific* recognizes the same thing, but the legislative schedule complained of indicates the view that the rate for 380 miles ought to be only once and a half as much as the rate for 100 miles.

On the basis of existing rates, which were taken into account by the Master in these cases, in the determination of the extra cost of the intrastate business, by reason of the shortness of the haul and the circumstances attending transportation, the extra cost in proportion to earnings of the intrastate business *over all business* ought to be as high as in North Dakota, where it was found to be 30.25 per cent on the Great Northern, and 31.41 on the Northern Pacific, as against 17 per cent on the Great Northern, and 20.2 per cent on the Northern Pacific.

On the Northern Pacific road, the average haul of

intrastate business in Minnesota is 104.52 miles, and of interstate business 485.3 miles, or about four and two-thirds times as long for the interstate, as against less than four times as long in North Dakota. (Exhibit 80 Elliott, Vol. 10 N. P.)

In the Great Northern case, the average intrastate haul was 113.3 miles, and the average interstate haul was 411.8, but (excepting iron ore interstate business on the Mesabi division of the Great Northern road) the average interstate haul in Minnesota was 557.6 miles.

It is to be presumed that the relation of rates for different distances in the case of wheat in North Dakota, the example cited by Judge Amidon in the opinion, was fairly typical.

An examination of the *existing commodity tariffs in Minnesota,* and an examination of the class rates complained of, will indicate that, generally speaking, the rate per ton mile for the average intrastate haul on the Northern Pacific or Great Northern is more than double the rate per ton mile for the distances of the average interstate haul touching Minnesota on these lines.

Therefore, the situation presented in these cases tends strongly to show a higher percentage of extra cost than that found in the North Dakota case.

In addition to the elements of extra cost specifically enumerated in the *Keyes case,* "there were many other minor items of extra expense". In the cases at bar, the testimony plainly shows, as will be hereafter pointed out, that the elements of extra cost are not confined to the "cost of conducting transportation", but extend

in substantial, if not, indeed, in a corresponding degree, to "cost of maintenance of plant".

The court further said, at page 54:

> "Many witnesses were called by the plaintiffs to testify in respect to the relation of *cost to revenue* in the case of local business as compared with the entire business of the companies.
>
> By none of them is the expense of *conducting transportation* placed at less than twice as much in the former case as in the latter.
>
> Mr. Erling, the general manager of the Milwaukee road, a person of great experience and apparent candor, stated that the cost of conducting local business on the entire system of that road was at least twice as great as for through business; and that in sparsely-settled communities, like North Dakota, where traffic is light, such cost was four or five times as great in the one case as in the other.
>
> This was also the testimony of Mr. Fink in the Nebraska Case, a witness whom both the circuit and supreme court mention as possessing peculiar qualifications for giving a trustworthy opinion upon such matters.
>
> The evidence on this subject is wholly uncontradicted. It is given by men whose many years of experience entitles their opinions to credit. The facts which they set forth as the foundation of their estimates impart to them a high degree of inherent probability.
>
> It is true that these witnesses are all identified with the business of common carriers, but the subject is confessedly one for expert testimony. and it is not easy to see how persons can be qualified to testify as experts except by experience in the business of which they speak.
>
> We are satisfied that the evidence of the plaintiffs on this subject is in the main both correct and trustworthy, and from it we are led to the conclusion that the *cost of conducting*

> *transportation* in North Dakota is, in proportion to revenue, at least twice as great for local business as for the entire business of the plaintiffs."

The court then found that the operating expenses and taxes for four years on the Great Northern road varied from 60.82 per cent to 55.09 per cent of its entire receipts, and on the Northern Pacific road were from 74.19 per cent to 63.44 per cent. For the same period, it was shown that on the former road, the expense of *conducting transportation* was, on the average, 30.25 per cent of its *gross income*, and, on the latter, 31.41 per cent.

The court also found that the reduction complained of was at least 13 per cent.

The opinion includes a table showing the above mentioned factors by years: percentage of operating expenses and taxes to gross receipts of entire road plus the extra cost of local business, being 30.25 in the Great Northern case and 31.41 in the Northern Pacific case, based upon the findings that the expense of conducting transportation of the business under examination was doubled in each case, thereby showing the total cost of the local business, that is to say the number of cents of operating expenses required to earn a dollar on the rates before the reduction. This cost of local business was then compared with 87 cents, the amount which would be received instead of the dollar after the reduction of 13 per cent had been applied.

The table is as follows:

"Great Northern.

	Percentage of Operating Expenses and Taxes to Gross Receipts of Entire Road	Extra Cost of Local Business	Total Cost of Local Business	Earnings as Reduced by Commission	Deficit or Surplus
1894....	60.82	30.25	91.07	87.	4.07 deficit.
1895....	58.	30.25	88.25	87.	1.25 deficit.
1896....	55.09	30.25	85.34	87.	1.66 surplus.
1897....	57.86	30.25	88.11	87.	1.11 deficit.
Average..	57.94	30.25	88.19	87.	1.19 deficit."

"Northern Pacific.

1894....	74.19	31.41	105.60	87.	18.60 deficit.
1895....	67.81	31.41	99.22	87.	12.22 deficit.
1896....	63.44	31.41	94.85	87.	7.85 deficit.
1897....	69.92	31.41	101.33	87.	14.33 deficit.
Average.	68.84	31.41	100.25	87.	13.25"

Note.—The relation of cost in proportion to revenue of the North Dakota intrastate business to that of *all business* as found by the Court there in the Great Northern Case was on the average, as 57.94 to 88.19 or as 1.52 to 1 and in the Northern Pacific Case 68.84 to 100.25 or as 1.45 + to 1, higher in each instance than any corresponding finding in the case at bar.

The relation of revenue per ton per mile of the intrastate business to that of the interstate business (in case of wheat) was shown to be as 2 to 1.

If such relation is the relation of revenue per ton mile from all intrastate freight to the revenue from all freight, then the relation of cost per ton per mile may be found as follows:

Multiply the revenue relation by relation of cost in proportion to revenue, to-wit:

$$\frac{2}{1} \text{ times } \frac{88.19}{57.94} \text{ equals } \frac{176.38}{57.94} \text{ equals } 3.04+ \text{ to } 1.$$

In the Northern Pacific case it would be,

$$\frac{2}{1} \text{ times } \frac{100.25}{68.84} \text{ equals } \frac{200.50}{68.84} \text{ equals } 2.90+ \text{ to } 1.$$

To be compared with 2.50 to 1, as found by the Master in the Northern Pacific and Great Northern cases at bar.

As before stated the percentage of operating expenses and taxes to gross earnings on the systems of these companies respectively, were as follows: Northern Pacific 61, Great Northern 70, Minneapolis & St. Louis 73. On the Minnesota intrastate business as found by the Master corresponding percentages were, Northern Pacific 80.5, Great Northern 77.7, Minneapolis & St. Louis 73.

A table corresponding to that contained in the opinion of Smyth v. Ames, at page 536, and of that in the Keyes case, *supra*, at page 55, may be stated from the findings of the Master in the cases at bar as follows:

	Year.	Cost by percentage of all business.	Extra cost of local business	Total cost of local business	Earnings as reduced were in effect except as noted below.	Loss.	Gain.
Northern Pacific.....	1908	61.	19.5	80.5	100	...	19.5
Great Northern.....	1908	70.	7.7	77.7	100	...	22.3
Minneapolis & St. Louis..	1908	73.6	....	73.6	100	...	26.4

Note.—If commodity rates prescribed by Chapter 232 had been in effect the intrastate freight earnings would have been reduced on the Great Northern according to the testimony of defendants, $129,852.53. (Page 271, Vol. 1 N. P.)

The interstate rates in Minnesota would necessarily have been greatly reduced. (See finding 29, p. 215, Vol. 1 N. P.)

In the Minneapolis & St. Louis case in 1907 the merchandise rates and passenger rates complained of were in effect only a part of the year and commodity rates complained of were not in effect at all. If all such rates had been in effect intrastate revenue would have been reduced $131,358.30.

No factor of extra cost of intrastate business was used by the Master in that case.

The following is a table made from the findings of the Master (Vol. 1 N. P. case, tables at pages 264, 270, 278, 280), which shows for each company the percentage of operating expenses and taxes to gross earnings on all business in Minnesota—percentage of extra cost of intrastate business over cost of all Minnesota business—total percentage of operating expenses and taxes of the intrastate business to earnings therefrom—actual earnings percentage—

number of cents of each dollar over operating expenses and taxes in the intrastate business—number of dollars of property value for each dollar of annual gross earnings and rate of return on actual earnings from all intrastate business:

	1	2	3	4	5	6	7	8
		Percentage of operating expenses and taxes to gross earnings on all business in Minnesota.	Percentage of extra cost of intrastate business over all Minnesota business.	Total percentage of operating expense and taxes of the intrastate business to earnings therefrom.	Actual earnings, percentage.	Number of cents of each dollar over operating expenses and taxes in the intrastate business.	Number of dollars of property value for each dollar, annual gross earnings.	Rate of return on actual earnings —all intrastate business.
Northern Pacific.....	1908	60.3	20.28	80.58	100	19.42	6.59	2.94
Great Northern.....	1908	60.7	17.0	77.7	100	22.3	6.64	3.35
Minneapolis & St.Louis	1907	65.2	....	65.2	100	34.8	8.39	4.14
xMinneapolis & St.Louis	1907	65.2	....	76.4	100	23.6	8.39	2.81

xNo instrastate losses deducted as shown on pages 279-280, Vol. 1 N. P. No factor of extra cost used in the calculation therefor.

The last table is in principle essentially the same as those used in:

Ames v. Union Pacific R. R., supra;
Smyth v. Ames, supra;
Northern Pacific Ry. v. Keyes, supra.

In the first two cases the factor of extra cost as used in the calculation was 10 per cent, but the opinions show that it was practically conceded that such extra cost of such intrastate business over all business was at least 20 per cent, possibly higher.

In the Keyes case, the factor of extra cost on the Great Northern road was 30.25 and on the Northern Pacific road 31.41 as against the findings in these cases in

Northern Pacific.....20.28
Great Northern.....17.00
Minneapolis & St. Louis..... 0.00.

The higher percentage of operating expenses and taxes on intrastate business of the Minneapolis & St. Louis Company is due to the losses which would have resulted if all of the rates complained of had been in effect during all of the year 1907.

In *Chicago, Milwaukee & St. Paul Ry. Co. v. Tompkins,* 176 U. S. 167, the subject of the extra cost of doing local business, both freight and passenger, was under consideration. Mr. Justice Brewer, delivering the opinion of this Court, indicated that substantially the same method as that applied in *Smyth v. Ames* should have been applied in the Tompkins case. It appeared that the schedule complained of would have reduced the actual receipts 15 per cent on passenger and 17 per cent on freight business.

The Circuit Court failed to find the actual cost of earning the local revenue, or the relation of that cost to the cost of earning all revenue. The Court said, (p. 177 *et seq.*):

> "The testimony discloses that the operating expenses of the entire system during each of the four years were over 60 per cent of the gross receipts. If the cost of doing local business in South Dakota was the same as that of doing the total business of the company, then the net earnings of that local business would not exceed 40 per cent of the gross receipts. Reduce the gross receipts 15 per cent—and the reduction by the defendants' rates was 15 per cent on passengers and 17 per cent on freight business—it would leave only 25 per cent of the gross receipts as what might be called net earnings, to be applied to the payment of interest on bonds and dividends on stock.
>
> But the testimony shows that the cost of doing local business is much greater than that of doing through business. If it should be 85 per cent of the gross receipts (and there was testimony tending to show that it was as much, if not more) then a reduction of 15 per cent in the gross receipts would leave the property earning nothing more than expenses of opera-

tion. These computations show that the method which the Court pursued was erroneous, and that without a finding as to the cost of doing the local business it is impossible to determine whether the reduced rates, prescribed by the defendants were unreasonable or not.

"But here we are confronted by the ninth statement in the findings of fact, to-wit, 'that the Court is unable to find from the testimony what the actual cost of earning the local earnings for the fiscal years ending June 30, 1894, 1895, 1896 and 1897 was.' If the Court meant by that to say that there was no testimony tending to show what was the cost of doing local business, we are constrained to say that the statement is erroneous, because *there was abundance of testimony bearing upon that question.* If it meant simply that it could not determine that fact with mathematical accuracy, basing it upon testimony of the exact amount of money paid out for doing such work, it is undoubtedly true, but there are many things that have to be determined by court and jury in respect to which mathematical accuracy is not possible. Take the ordinary case of condemnation of real estate, the value is to be determined by the trial tribunal, whether jury or court, and yet no one is able to state the exact value. In this very case the Court fixed the value of the company's property in South Dakota at $10,000,000, and yet it is impossible from the testimony to say that this conclusion was absolutely accurate, that there was testimony tending to show to a dollar such value. Beyond the figures given from the books of the company of the actual cost of doing the total business of the company there was the testimony of several experts as to the relative cost of doing local and through business. *Such testimony is not to be disregarded simply because it cannot demonstrate by figures the exact amount of per*

cent of the extra cost. It is obvious on a little reflection that the cost of moving local freight is greater than that of moving through freight, and equally obvious that it is almost if not quite impossible to determine the difference with mathematical accuracy. Take a single line 100 miles, with ten stations. One train starts from one terminus with through freight and goes to the other without stop. A second train starts with freight for each intermediate station. The mileage is the same. The amount of freight hauled per mile may be the same, but the time taken by the one is greater than that taken by the other. Additional fuel is consumed at each station where there is a stop. The wear and tear of the locomotive and cars from the increased stops and in shifting cars from main to side tracks is greater; there are the wages of the employes at the intermediate stations, the cost of insurance, and these elements are so varying and uncertain that it would seem quite out of reach to make any accurate comparison of the relative cost. And if this is true when there are two separate trains, it is more so when the same train carries both local and through freight. It is impossible to distribute between the two the relative cost of carriage. *Yet that there is a difference is manifest, and upon such difference the opinions of experts familiar with railroad business is competent testimony, and cannot be disregarded.*

We think, therefore, there was error in the failure to find the cost of doing the local business, and that only by a comparison between the gross receipts and the cost of doing the business, ascertaining thus the net earnings, can the true effect of the reduction of rates be determined."

It will be noted that the Court states that in that case the testimony tended to show that *the cost of doing local business before the reduction was 85 per cent*

of the gross receipts or more, and that the reduction of 15 per cent in the gross receipts would leave the property earning nothing more than expenses of operation.

In the cases at bar, the highest per cent of operating expenses to gross receipts on the intrastate business in Minnesota was in the Northern Pacific case *80.5*. In the Great Northern case it was *77.7*. In the Minneapolis and St. Louis case it was *76.4*.

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In *In Re Arkansas Ry. Rates,* 163 Fed. 141, Circuit Judge Van Devanter, now Mr. Justice Van Devanter, after finding that the additional cost to produce a given amount of revenue in the intrastate freight business was at least 100 per cent over like cost in the interstate freight business and at least 15 per cent more in the intrastate passenger business than in the interstate passenger business laid down a rule for division of total cost as follows: (p. 142)

> "Increase the intrastate earnings by the ascertained percentage representing the difference in cost, thereby ascertaining what would have been earned by the same actual expenditure in conducting the intrastate traffic, had it been attended with the same relative cost as the interstate traffic. Then add the intrastate earnings, as so increased, to the interstate earnings, thereby ascertaining what would have been earned by the actual expenditure in conducting both the intrastate and the interstate traffic, had the former been attended with the same relative cost as the latter. Then ascertain what proportion of this total represents the intrastate earnings, as so increased, and what proportion represents the interstate earnings, and then ascertain the corresponding proportions of the total cost of the intrastate and the interstate traffic."

The opinion in that case does not indicate the relative length of haul of the intrastate business in Arkansas to the interstate business therein, or upon the systems of railroads involved. It is, of course, undoubtedly true in that State, as it has been shown to be in North Dakota and in Minnesota, that the length of haul of the interstate business therein is very much greater than the length of haul of the intrastate busi-

ness therein, and also that the revenue per ton per mile for the short haul business is higher than for the long haul business, in accordance with the uniform practice in rate-making.

The basis of the calculations in that case *was not the amount of expense to produce a ton mile or a passenger mile* in the one class of business as compared with like cost in the other class of business, but the calculations indicated were based upon the fact *"that the production of a given amount of revenue is attended with greater cost in the intrastate business than in the interstate business* * * *", namely, that the additional cost of the intrastate freight was at least 100 per cent more than of interstate freight (not of all freight, as used in the Ames case and in the Keyes case) and that such additional cost in the passenger department was 15 per cent more in the intrastate business than in the interstate business.

On the revenue basis, the Master, in the cases at bar, found that on the Northern Pacific road in Minnesota it cost *at least 73.77 per cent* more to produce a dollar in the intrastate freight business than it cost to produce a dollar in the interstate freight business, and only *13.95 per cent* more to produce a dollar in the intrastate passenger business than in the interstate passenger business in Minnesota. (See Table attached to page 264, Vol. 1 N. P.)

In the Great Northern case he found that it cost at least *23.217* per cent more to produce a dollar in the intrastate freight business in Minnesota than to produce a dollar in the interstate freight business therein, and *23.78* per cent more to produce a dollar in the intrastate passenger business in Minnesota than to pro-

duce a dollar in the interstate passenger business therein.

In the Minneapolis & St. Louis case, he found that the production of a given amount of revenue in the intrastate business in Minnesota was attended by greater expense than the production of the same amount of revenue in the interstate business therein, but his calculations were based upon the assumption that the cost was the same in the intrastate as in the interstate business.

In the case of *St. Louis & San Francisco Ry. Co. v. Hadley*, 168 Fed. 317,—The Missouri Rate Cases—now pending in this Court the finding was based on the revenue basis, and was to the effect that in the freight business it cost *50 per cent more to produce a given amount of intrastate revenue than to produce the same amount of interstate revenue, and 25 per cent more to produce a given amount of intrastate revenue in the passenger business than the same amount of interstate revenue.* (See tables at p. 329 *et seq.*)

Referring to the elements of extra cost, he said: (p. 348)

> "That it costs more to carry either freight or passengers proportionately for a short than a long haul is undoubtedly true, although all the elements are not more expensive. Local trains generally have poorer and older and cheaper cars and locomotives. But their speed is greater between stations. There are many stops. They carry proportionately much greater dead weight. They do much switching, and there are many delays. Their crews are paid more proportionately to distance and what is carried. The trains are daylight trains only. With freight the car load and number of cars

are much the less, and from station to station grows less, and is largely made up of single parcels, boxes, and individual shipments from as many consignors to as many consignees, first put in one station, and at the end of the trip into another station by the company. Usually there are two terminals, comprising an enormous amount of the investments and expenses of the company. The local train is seldom loaded to the capacity of the engine, to the loss of much of the investment and expense. The clerk hire, selling tickets, issuing bills of lading, making expense accounts, and auditing and making records, are attended with like expense for the small and the large items. Many stations would be done away with but for local business." * * * *

"But from the great weight of the testimony it can well be said that the ton mile is not reliable and the revenue is more nearly correct, as showing that it costs more by 25 per cent to carry passengers, and 50 per cent to carry freight locally, than it does when interstate. Generally speaking, this is undoubtedly true. (Certain exceptional conditions are noted.) But all these are exceptions, and the testimony establishes the rule as stated." * * * *

"The freight rate statute under consideration, in every schedule, recognizes the principle that proportionately there should be more charged for a short than a long haul. For instance, Class D allows a charge of five cents per hundred for car load lots for the first 25 miles, and one-half cent for the second and additional 25 miles. And commencing with the state of Pennsylvania of 1846, chartering the Pennsylvania Road, to the present time, every statute upon the subject fixing freight rates and many of them fixing passenger fares, recognize this principle. So that while it is a legislative function to fix rates, we have innumerable legislative recognitions of the great-

er cost for weight per mile for a shorter than a longer haul, and in some instances as to passengers. And no state has so recognized this to a greater extent than has the Missouri Legislature. And the courts passing upon the question have invariably recognized this as being so, and that the revenue theory is the correct one as against the ton mile." (p. 348.)

In *Missouri, Kansas & Texas Ry. Co. v. Love*, 177 Fed. 493, in the Circuit Court for the Western District of Oklahoma, Circuit Judge Hook presiding, the questions involved in the cases at bar were considered. The Court said: (p. 498)

"When a general or common expense cannot be located what is more obviously reasonable than to say in the first place the different branches or departments shall bear it according to the value of their products or their gross earnings, and then *make due allowance* for exceptional conditions if any are perceived?

That seems at the start to satisfy the mind intent on equity. It is a working basis for the distribution of all expense incident to a railroad business among its revenue yielding operations of every character. On the other hand, the ton mile rule for which contention is made can be applied to nothing but the freight business. Besides being entirely useless as a distributor of expense to the mail and express business of a railroad and to the services of switching, demurrage, storage and the like, the ton mile rule is radically inaccurate when applied to the very business to which it is best adapted. It does not consider the differences and risks in the character of the freight transported, whether glassware or sand, furniture or coal; whether the freight is moved in carload or less than carload lots; whether the haul

is long or short; the character of the traffic as regards time consumed in transportation and occupation of the track and equipment; the number of expensive handlings at terminals and terminal expense generally. The ton mile theory places interstate traffic while it is moving in the State upon the basis of local traffic and therefore ignores the effect of the external haul upon the internal cost. Concededly the average of haul of interstate traffic is materially greater than that of traffic wholly within the state and it is an axiom in transportation that the longer the haul the less the cost per ton per mile.

These matters in the aggregate run enormously into the cost of freight transportation, but none of them are picked up or accounted for by the ton mile rule which rests on the erroneous assumption that the transportation costs the same per ton per mile regardless of character, time, distance or circumstance. The revenue rule is not ideal, but revenue is the product of rates and service, and, generally, in the making of rates some regard is had to the cost of service. In other words, earnings reflect to some extent the important differences in the cost of service which the ton mile rule entirely ignores.

Bearing on the division of expense is the much controverted question of extra cost of the local business as compared with the interstate. *That the former costs much more than the latter is beyond doubt, but the difficulty is in applying the measure of difference.*

There is a general accord among practical railroad men of high standing and long experience that the cost of local freight traffic is from two to eight times as much as that of interstate traffic, and of local passenger traffic from twenty-five to fifty per cent more than the other.

* * * * * *

But substantial factors of extra cost of local traffic may be found in other general accounts; for example, in the large cost of maintenance of yard tracks and sidings at terminals which is charged not as a transportation expense but to maintenance of way and structures. Those tracks sometimes constitute a fifth of the total mileage of a railroad.

The criticism of the formula for apportioning extra cost mentioned in the Arkansas case (C. C. 163 Fed. 141) is due to a misconception. It appears the evidence in that case showed that on a revenue basis the cost of local freight traffic was double that of the interstate.

The court gave a quick abstract rule for ascertaining the local cost, which, if applied to the facts there, would have been to double the local revenue, add it to the interstate revenue, ascertain what proportion the doubled amount bore to the total sum and then take that proportion of the total cost of both.

Although every algebraic or mathematical formula applied to the particular facts before that court would have brought the same result, it is earnestly argued here that if a given body of rates are confiscatory, they must, under the rule of the Arkansas case, still be confiscatory though the revenue were doubled by doubling the rates—that confiscation would follow, however high the rates and great the revenue.

Obviously, if revenue is doubled solely by increasing local rates there would be little, if any, increase in gross cost; if revenue is doubled by increase in volume of local traffic without changing rates the gross cost would probably increase, but not proportionately. But no such construction as contended for can be put upon the lahguage of the Court. If the formula given is to be applied to shifting conditions there should be a corresponding change in the numerical factors. This is obvious from

a cursory reading of the opinion. A change in the amount of local revenue from whatever cause, rates or volume of traffic, would affect the relative cost predicated on the revenue basis, but whenever the ratio is found the apportionment can readily be made by employing it in the way indicated in the Arkansas case." (p. 500)

The case of *M. K. & T. v. Love supra,* was affirmed in the Circuit Court of Appeals of the Eighth Circuit in 185 Fed. 321.

St. Louis & Southwestern Ry. v. Allen, et al., 187 Fed. 290.

St. Louis, I. M. & S. Ry. v. Allen, et al., 187 Fed. 290.

These actions were brought by the railway companies to restrain the enforcement of state-made freight rates and passenger rates

A ground of action alleged was that the rates complained of were confiscatory.

The principal determinations of the court, similar to those here under consideration were:

(1) Valuation was apportioned between the two classes of business, intrastate and interstate, on the revenue basis, and inasmuch as the issues involved the entire intrastate business, freight as well as passenger, it was said:

"It is immaterial how the valuation is apportioned between the freight and passenger service."

(See subdivision 17 of opinion, p. 317-320.)

Note.—In the cases at bar, value was apportioned on the revenue basis, and assignment thereof and rate of return is shown to the following different classes:

(a) Intrastate freight;
(b) Interstate freight;
(c) Total freight;
(d) Intrastate passenger;
(e) Interstate passenger;
(f) Total passenger;
(g) Total intrastate, including both freight and passenger;
(h) Total interstate;
(i) Total of all.

(See Tables p. 264 and 270; also 274 *et seq.*, Vol. 1 N. P.)

(2) Miscellaneous items of earnings and expenses, not directly attributable to either intrastate or interstate business, were apportioned between the two classes of business on the basis of earnings. (Subdivision 13 of opinion, p. 311-312.)

Note.—In the cases at bar, the same method was applied, and no assignment of error challenges the correctness of the determination. (See p. 259 *et seq.*, 266 *et. seq.*, and 278 *et seq.*, Vol. 1 N. P.)

(3) The operating expenses were divided between the intrastate business and interstate business on various bases. (See subdivision 18 of opinion, p. 320 *et seq.*)

At pages 320, 321 and 322, Judge Trieber held that for the division of the total freight operating expenses in the State between the intrastate freight business and the interstate freight business therein, *neither the straight ton mile basis nor the straight revenue basis was appropriate*, and that for the division of the total passenger operating expenses within the State between

the intrastate passenger business and the interstate passenger businesss therein neither the straight revenue basis nor the straight passenger mile basis was appropriate, and in conclusion upon that point he said:

> "On the other hand if the ton mile basis is adopted for the division of the operating expenses between inter and intra state earnings, without considering the additional expenses of the local business which it is conceded by all exists although they differ as to the percentages the result would be just as far wrong as the other.
>
> *But if proper allowances are made for the higher rate received for local business and also for the increased cost of the local business as it appears from the evidence, it is wholly immaterial which of these two theories is adopted whether the revenue or ton mile basis, as the results will be the same.*"

The illustrations of the court are found at pages 323 and 324 of the opinion.

(4) It was shown that it was not claimed that the interstate rates were too low (p. 325), and that the State claimed in those cases that the rates charged for the intrastate business *exceed those* for the through business on the Iron Mountain road *98 per cent.*, the earnings for the local business being 13.377 mills per ton mile, and for the through business 6.75 mills; and on the Southwestern road they *exceed* (that is the rate charged for the state business exceed those of the through business) *141 per cent.*, the earnings for the local business being 20.945 mills, and for the through business 8.665 for the ton mile.

And the court said:

"The statistics of the two roads, as shown by the statements filed, sustain these figures; but it must be conceded that, unless the commodities hauled in the state and through business are practically the same, these figures cannot be adopted as proper factors for the determination of that question.

This is easily proven by the following simple example: If the state business carries one-half high-class traffic at 3 cents a ton mile and one-half low-class at 1 cent per ton mile, the average of the entire traffic would be 2 cents; but if it carries only 25 per cent high-class commodities at 3 cents and 75 per cent low-class at 1 cent, the average would at once be reduced to 1.5 cents per ton mile, a difference of 33 1/3 per cent. * * * * * *"

The court found that the difference in earnings per ton mile was largely caused by the fact that there was relatively more low-class tonnage in the interstate business than in the intrastate business, and by other facts stated at pages 325-330 of the opinion, and determined that:

"Taking all these matters into consideration, and after careful calculations, which it is unnecessary, if not impossible, to set out in this opinion, the finding of the court is that, altogether *the intrastate freight rates in force at the time of the institution of these actions and in 1907 were 50 per cent higher than the inter and trans-state.*"

The effect of this finding was that a smaller portion of the extra cost was covered by the higher intrastate rates than would have been the case if the court had taken the average revenue per ton per mile, as claimed by the State.

5. *Difference in expense between state and interstate.*

In the Arkansas cases, the court said: (p. 330)

> "That there is a material difference between the expense of state and interstate business is conceded by all. On the part of the state it is claimed this difference is not exceeding 87 per cent., while on the part of the railroads the contention is that it is much greater. This 87 per cent. is the result of the calculations after deducting the share with which the interstate traffic is chargeable for its proportion of the freight carried on local trains. The actual difference *between the expense* of local and through trains per ton mile, as calculated by the state's accountants, and testified by Mr. Hamilton, is 162.67 per cent. But it is claimed, as a large proportion of the freight transported on local trains is interstate, that part of it should be charged with its proportionate share of this additional cost, and when that is done the actual difference in cost it is claimed is 87 per cent.
>
> *The lowest estimate made by any witness for complainants seems to be that it is at least 200 per cent greater, while some estimate it as much as 700 per cent.*

The witnesses for the railroads do not base their opinions upon itemized statements, as no records were kept by either of the roads, for the purpose of dividing the expenses between the state and interstate business; but as all these witnesses are men who have been engaged in railroad work and connected with railroads from their earliest manhood, starting at the bottom of the ladder and now occupying most responsible positions, some as general managers, comptrollers, auditors, superin-

tendents, and other high positions, it is claimed that their testimony, based upon their great experience, should be controlling."

In the cases at bar, there was an abundance of corresponding proof, which we shall hereafter point out in detail.

6. *State's theory for division of operating expenses in the Arkansas cases.*

At the trial in the Arkansas cases, an expert accountant, Mr. Hamilton, representing a firm of "expert accountants of national reputation," was called by the defendants. He appears to have had but little experience, if any, in the management of railroads. His scheme for making the calculations was examined and applied *in connection with all the other testimony in the cases,* by means of which the court reached the following results: (p. 332-344)

That on the Iron Mountain road the total difference in cost between the intrastate and interstate freight business was *210 per cent.* in favor of the intrastate business; that is to say, that to produce an intrastate ton mile it cost 3.1 times as much as to produce an interstate ton mile;

And that, "after deducting the increased revenue, the intrastate *passenger* service should be charged with 10 per cent. greater net cost than the through."

On the Southwestern road, it was found that there should be "an additional allowance of 40 per cent. above that of the Iron Mountain for extra expenses of local traffic, making the difference in cost *250 per cent.* * * * ;" that is to say, on the Southwest-

ern road it cost *3.5 times* as much to produce on intrastate ton mile as an interstate ton mile. (p. 342, 343.)

As to each road, it was found that the revenue per ton per mile on the intrastate business was 50 per cent higher than that on the interstate business (taking into account the difference in the relation of the higher classes to the lower classes of commodities).

The court also found:

> "It is also shown that the average length of the haul is greater (on the Southwestern) for the interstate than on the Iron Mountain; the state haul of this road being 40.79 miles, and the interstate 222.42 miles. The average haul of all interstate freight over that line, disregarding state lines, is 344.41 miles." (p. 343)

The results in the Arkansas cases, compared with those in the Great Northern and Northern Pacific cases at bar, may be stated as follows:

Ton Mile Basis.

Arkansas.		**Minnesota**	
Relation of Cost per ton mile intrastate to interstate.		Relation of Cost per ton mile intrastate to interstate.	
I. M.	310 to 100	N. P.	250 to 100
S. W.	350 to 100	G. N.	250 to 100

Revenue Basis.

Arkansas.	Minnesota.
Relation of Cost to earn a dollar in the intrastate business to Cost to earn a dollar in the interstate business.	Relation of Cost to earn a dollar in the intrastate business to Cost to earn a dollar in the interstate business.
I. M.....206+ to 100	N. P.....173+ to 100
S. W. .....233+ to 100	G. N.....123+ to 100

Note.—On the "ton mile basis" the figures in the Arkansas cases are taken from page 343 of the opinion of the Circuit Court.

In the Minnesota cases:

See p. 258, Vol. 1 N. P., where it is said:

> "The Master finds from the weight of testimony (on the Northern Pacific and Great Northern roads) that the cost per ton mile of doing state freight business is at least two and one-half times as much as is such cost in doing the interstate freight business in Minnesota, and that the testimony would amply sustain, if it does not compel, a finding that such relation of cost is as three to one."

On the "revenue basis," we arrive at the figures in the Arkansas cases as follows:

On the Iron Mountain road:

Relation of cost per ton per mile intrastate to interstate was as 310 is to 100. Relation to revenue per ton per mile intrastate to interstate was as 150 is to 100. (See p. 343.) Then the relation of cost to earn a dollar in the intrastate business to cost to earn a dollar in the interstate business is

$$\frac{310}{100} \div \frac{150}{100} \text{ equals } \frac{2.06+}{1.00} \text{ or, } 206+ \text{ to } 100.$$

On the Southwestern road:

$$\frac{350}{100} \div \frac{150}{100} \text{ equals } \frac{2.33+}{1.00} \text{ or, } 233+ \text{ to } 100.$$

In the Minnesota cases, see as to Northern Pacific p. 261, and as to Great Northern, 268, Vol. 1 N. P.

These comparisons may be stated in another form as follows:

In the Arkansas cases:

On the Iron Mountain road, it costs 3.1 times as much to produce a ton mile in the intrastate business as in the interstate business, and 2.06+ times as much to earn a dollar in the intrastate business as in the interstate business.

On the Southwestern road, it costs 3.5 times as much to produce a ton mile in the intrastate business as in the interstate business, and 2.33+ times as much to earn a dollar in the intrastate business as in the interstate business.

In the Minnesota cases:

On the Northern Pacific road, it costs at least 2.5 times as much to produce a ton mile in the intrastate business as in the interstate business, and at least 1.73+ times as much to earn a dollar in the intrastate business as in the interstate business.

On the Great Northern road, it costs at least 2.5 times as much to produce a ton mile in the intrastate business as in the interstate business, and at least 1.23+ times as much to earn a dollar in the intrastate business as in the interstate business.

Conclusions.

From the foregoing it clearly appears that in determining the cost of doing the business covered by the rates complained of in the cases at bar respectively,—

(a) All factors necessary to the solution of the problem were found;

(b) The relative cost per service unit (ton mile and passenger mile) and the relative cost per unit of service *in proportion to the revenue* derived therefrom in the intrastate business to the corresponding cost in the interstate, freight and passenger respectively, having been found, the division of operating expenses in the freight department and the passenger department respectively between the intrastate business and the interstate business may be made, and the same result produced, by the employment of either basis, and in these cases such divisions were made on both bases and each produced the same results as the other, that is, it is immaterial which basis is employed to make such divisions, if the factors in the one be taken in the equivalent terms of the other;

(c) The excess of cost of the intrastate business over the cost of the interstate business, as found in these cases, is low when compared with corresponding findings in other railroad rate cases.

The Evidence Relating to Extra Cost of Intrastate Business in the Cases at Bar.

We contend that the extra cost as found by the Master in these cases "is more than sustained" by the evidence and that, especially as to the intrastate freight business in the Great Northern case, the evidence compels a finding that the extra cost of such business over the corresponding interstate business is much higher than that found by the Master.

The importance of the subject seems to us to require that a brief abstract of the testimony relating to it should here be printed.

It is as follows:

Intrastate Freight Business.

The complainants in these cases followed the same method of establishing the cost of doing the intrastate business that has been employed in all the reported cases. That is, they have taken the opinion of experts familiar with the essential facts controlling the relation of intrastate cost to other cost. They are advised that such cost never is, and cannot be, kept separately or set up in accounts or statistics by the companies.

In the Northern Pacific case Complainants' Exhibit 80 Elliott furnishes in part the basis of facts upon which experts gave their opinions as to such cost. It indicates: system mileage, main track, first, 5,981.77; main track, second, 253.10; main track, other, 1.58; total main track, 6,236.45, to which may be added siding, spurs, yard tracks, leased tracks, trackage rights which produces a system mileage of 8,427.97;

Mileage in Minnesota, main track, first 992.07; main track, second, and additional tracks, 206.45, making total main tracks 1,198.52, side tracks, 612.24, making in all in Minnesota 1,810.76 miles.

The exhibit also shows the equipment on system, and the average capacity of cars, all classes to be 34 tons; it gives the traffic statistics of the freight and passenger business, that is, revenue tons carried, revenue tons carried one mile, freight revenue, revenue tons per train mile, and revenue tons per loaded car mile, also passengers carried, passengers carried one mile, passenger revenue, and average distance carried.

It also gives same statistics of traffic, freight and passenger, in the State of Minnesota. It appears that a little less than 12 per cent of ton miles produced on the line in Minnesota is intrastate business; that the average length of haul of such business is 104.52 miles; that the average length of haul of interstate business touching Minnesota is 485.3 miles; and that the latter is moved on the average 185.86 miles within the State of Minnesota; that the revenue per intrastate ton mile is 1.1910 cent, and per interstate ton mile is 0.8279 cent; that the relation of revenue per ton mile from intrastate traffic to interstate traffic is as 1.44 is to 1.00.

Testimony of Mr. Howard Elliott, President of the Northern Pacific.

(References are to record in Northern Pacific case.)

He said in substance, as follows:

The Northern Pacific company does not keep accounts for the purpose of showing separately the cost of Minnesota intrastate business, either freight or pas-

senger, and that as far as he knows no such accounts have ever been kept by any railroad, and that in his opinion it is not practicable to keep those accounts in such a manner as to produce results really meaning anything, because the movement of state freight and interstate freight are so involved one with the other, and the expenses incident to such movement so involved one with the other, that any effort to separate them would be a mere arbitrary one and would not represent truly the cost of one or the other, and that what is stated with respect to freight applies also with respect to passenger business. (Vol. 7, page 3190 N. P.)

Railway Company keeps accounts as required by the Interstate Commerce Commission and the Minnesota Commission. Accounts showing cost of intrastate business, freight or passenger, cannot be kept.

He further said that the accounts of his company are kept in accordance with the directions of the Interstate Commerce Commission and in the forms prescribed by it, and that they are also kept to furnish readily the information which is currently and regularly called for by the Minnesota Railroad and Warehouse Commission in annual reports, and that his understanding is that it is the law that the accounts must be kept as prescribed by the Interstate Commerce Commission, and not otherwise. (Pages 3200, 3201.)

That any attempt to make a sub-division would involve very marked increase in the administrative features of the company and require a large increase in men at terminal stations and divisional points, require an elaborate system of classification and subdivision of

accounts and after the obtaining of data in the field, superintendence of experienced men would be required, and that it is doubtful whether under any system such data could be so obtained that it would be of value; but assuming that data could be so obtained and brought to a central point for digestion and classification of results, it would require a large increase of accounting force in the general offices and that it is his judgment it is very doubtful whether the final result would throw any more light on the subject than can be obtained by taking the judgment of men engaged in the business who have observed day by day the events and forces at work in the management and handling of the business. He stated that it was his judgment that the final tabulated results so obtained would not be worth as much as the judgment of experienced men studying the business every day and moment. (Pages 3124, 3125.)

Relation of revenue per ton per mile on intrastate business to that on interstate business is as 1.44 to 1.00. Local rates in Minnesota are entirely too low.

After calling attention to some of the statistics contained in Exhibit 80, particularly the average length of haul intrastate in Minnesota and interstate touching Minnesota, the relation of revenue per ton mile of each to the other, and stating that such ratio in other states is more than 1.44 to 1.00, and that in his opinion the local rates in Minnesota are entirely too low, and that as compared with the interstate business touching Minnesota the intrastate business therein is to be considered a short-haul class of business, and that

the bulk of the same is carried on local trains, he expressed the opinion that it does cost more per ton per mile to do the Minnesota intrastate business than it does to do the interstate business on the line of the Northern Pacific or the interstate business on that line which touches Minnesota, and that it was his judgment that the cost of doing Minnesota intrastate business is higher in proportion to the average rate received thereon, viz., 1.191 cent per ton per mile, than is the cost of interstate business in proportion of revenue received thereon, viz., 0.8279 cent per ton per mile. (Page 3128.)

Elements of Extra Cost.

Mr. Elliott was asked to state the elements of extra cost of doing the state business or short-haul business as compared with the cost of the longer haul business on that line, and said in substance as follows:

Length of Haul.

The average haul of state business, 104.52 miles, as compared with 485.3 miles for the interstate business, is the one most potential element in the direction of higher cost. (Page 3128.)

Intrastate business has two terminal services.

The state business has to be handled twice at terminals. The interstate business is handled only once at a state terminal on part of the freight, and is not handled as a terminal freight shipment at all on such classes of freight as cross entirely through the state in either direction, which business amounts to from 10 to 15 per cent of the total freight movement. (Pages 3128, 3129.)

Short haul business uses most valuable facilities.

The local short-haul business uses up most valuable terminal facilities in order to obtain its proper handling from the larger distributing centres, and uses those facilities to a greater extent for the tons handled than does the longer through business. He illustrated by a case of a large car which will occupy ground approximately 50 feet long and 15 feet wide, or 750 square feet, with tracks upon it. To do local business the car is set there and the space is taken up for handling tonnage going locally in a car which at times contains only 2½ tons on the local business; that loads may go as high as 10 or 15 tons per car, but not often, whereas the loads in the long-haul business would be 15, 20, 30 or 40 tons per car. (Page 3129.)

He applied what was said with respect to the use of the ground and loading tracks to warehouses at larger distributing centres, and pointed out that the charge against the local short-haul business is greater for the revenue received than is the charge for the long-haul business because it takes the same amount of floor space to handle the local freight going 10 miles as it does to handle it if it goes a thousand miles. (Page 3129.)

He pointed out the necessity of maintaining at country terminals suitable warehouses and industry tracks, team tracks, special sidings, and the like, for the limited amount of tonnage handled and the greater care and attention required per unit of business. (Page 3129.)

Clerical and Warehouse Labor Greater in the Short Haul Business.

That the amount of clerical labor and warehouse labor connected with the local business is much greater than is the case in long-haul through business; a great many more way-bills, manifests and other blanks incident to the checking and care of local business are required for the revenue involved than are required for the long-haul through business. This fact increases cost all along the line because every time a transaction is initiated on the railroad, in order to properly cover the car and accounting of it to a final result in the treasury there are many steps taken so that each individual transaction is multiplied many times. (Page 3130.)

Chances of Damage Greater in Short Haul Business.

The fact that there is a greater number of individual transactions in the short-haul business increases chances of damage in handling that freight. The chances of damage are increased by the short-haul both as to the less than carload business and the carload business, though as to the carload business the degree of increase is not so great. (Page 3130.)

Use of Equipment and Cost of Its Maintenance Greater in Short Haul Business.

That in the short-haul business there is an excess use of equipment for loading and unloading—there is generally a larger movement of empty cars in one direction or the other for handling intrastate business, a larger number of cars must be allotted per ton (for

like volume) of freight for the intrastate business, therefore the maintenance of equipment charge is much more per ton on that class of business than on the through. (Page 3130.)

Local or way freight trains loaded lighter—wear and tear is greater—movement is slower—consumes more fuel—require more switching—often carry passengers—more stops required—greater chances of injury—apparent cost per ton mile decreased because local trains carry some through freight—wages of crews higher—less efficient to produce ton miles.

That it is obvious that a local or way freight train can only be loaded to a limited extent as compared with entire capacity. The train may be started from a starting-point with total number of cars that it should handle, but they are dropped along the line at point after point, and frequently the train will only handle 40 to 60 per cent of its capacity in doing the way work. (Pages 3130-3131.)

That the wear and tear on the local train is greater because of constant stopping and starting; there is increased switching, resulting in greater damage to equipment, greater wear and tear to frogs and switches and other tracks surrounding country terminals. (Page 3131.)

The local train is generally on the road more hours than a through train, and for that reason consumes more coal, because even when engine is not moving it is burning more or less coal, and the local switching at the country point requires a considerable amount of coal. (Page 3131.)

Arrangements of the smaller country stations and the industries surrounding them in Minnesota have

grown up more or less haphazard, with the result that the amount of shifting is large. (Page 3131.)

Many of the local trains for public accommodation carry passengers. This is a bad practice from an economical railroad standpoint. Two stops have often to be made of the local train at every station; one for passengers carried and the other to do the local freight work. These stops are expensive. The risk of handling passengers on such trains is great. Witness cited instances illustrating his statements upon this point. (Pages 3131, 3132.)

There is also an increase in the chance of injury to employes on account of switching at all points, of frightening horses, of collisions with vehicles at highway crossings; the chance of stealage and pilfering is greater. (Page 3132.)

That the cost of operating a local train is sometimes decreased (measured on the basis of cost per ton per mile) because it handles through freight, and to that extent through freight business helps to reduce the cost of local freight business. If there were no through freight at all where the local freight trains run, the cost of doing the local business would be still higher, and, per contra, the cost of operating some of the through trains on main lines, where a limited amount of local freight is handled for the purpose of expediting it, is increased because that through train has to stop and set out local cars. It works both ways: the local cost is helped out by the through business, and the local business increases the cost of the through trains. (Pages 3132, 3133.)

The wages of employes on the local trains are higher than on through trains, possibly 25 per cent more.

Often there is a constructive mileage allowed on the way freight trains because the run is short and at times because of the heavy volume of business to be switched at local stations, overtime is made which is expensive. (Page 3133.)

Because the local train is rarely used to its full efficiency, and the engine does not carry all that it can, it is probable that a local train will not produce a fifth of the ton miles of its operation in a day that a through train will do. In fact I believe in some parts of Minnesota that some of the local trains would not produce a tenth of what the through freight train would produce in ton miles. (Page 3133.)

Exhibit 80 indicates that the average capacity of all classes of cars is 34 tons. In local business cars are rarely loaded to their full capacity. Often in the merchandise business cars are loaded with 2 to 3 thousand pounds. Statistics made a year or two ago indicated that merchandise averaged 2½ tons to the car. It is obvious that full use of carloading is not obtained in the local short-haul business. (Page 3133.)

It is only at certain seasons of the year that there will be business both ways locally on the railroad, resulting in much greater empty mileage of cars on account of the local business. The car will not produce the ton miles in the local short-haul business that it will produce in the long-haul through business. (Pages 3133, 3134.)

Readiness to Serve.

The state business is scattered. It is short-haul business. It moves irregularly and spasmodically. It may be good for a day or two in a week and the balance of the time it is poor. It may be fairly good for a month and for several months there may be very little. The railroad must prepare for the maximum of business or the "peak" of the load, not only in tracks but also in having equipment, engines, cars and organization engaged for the purpose. All of those facilities are only worked to their capacity for a limited period of time, and this very fact, of being ready to serve a volume of business that rarely comes, necessarily makes the average cost per unit very much greater. The principle of a charge for readiness to serve is recognized to a very limited extent in railroad practice because railroads are allowed to charge demurrage on a car when it is ready to serve (though that charge is so small as to be insignificant).

Mr. Elliott cited the practice of electric companies to charge a certain price per unit of consumption coupled with a certain fixed minimum charge if there be no consumption. Also the practice of water power companies to exact a minimum charge for "readiness to serve." He pointed out that a railroad receives no compensation for its readiness to serve, and expressed the opinion that it is entitled to a very liberal compensation for its investment, its track, its organization, its equipment, its facilities, when it does move the business, for it rarely has its "readiness to serve" used to its full efficiency. He expressed the opinion that insensibly this fact of "readiness to serve" means that the local costs are very much higher

and that local rates should be higher, and that railroad managers and owners themselves have overlooked or lost sight of the importance of this item (pages 3134, 3135), and that local rates everywhere, not only in Minnesota but everywhere, are entirely too low, and that this fact is somewhat lost sight of because the great volume of commerce moving long distances has paid the railroads. (Page 3136.)

Comparative Use of Equipment in the Two Classes of Business Illustrated.

As illustrating how equipment is not used to its capacity in the short-haul business, Mr. Elliott cited some instances. Way freight trains usually travel in daylight only and are held for local service when otherwise they might be used for the other class of business.

He cited an instance of an engine, representing an investment of $18,000, running between Staples and Dilworth, 100 miles, handling 60 loaded cars, producing 6,000 car miles, carrying loads averaging 20 tons per car, or producing 120,000 freight ton miles in a day's run. In this case the engine investment is 6-2/3 cents per ton mile.

For comparison he instanced a branch line with smaller engine, representing an investment of $10,000, handling perhaps 20 cars at commencement of the trip, reducing that number to 10 or possibly 5 before it arrives at destination. If it be on the Little Falls branch the run is 87 miles long, and assuming an average of 10 cars for the whole distance, 870 car miles are produced in a day's work. If the loading of the cars will average 8 tons, 6,960 ton miles will be

produced in that day by that engine. Which means that there is $1.43 invested in an engine for each ton mile produced, about 25 times as much as in the case first referred to. (Pages 3137, 3138.)

Illustrating the failure to use cars to capacity in the local business, Mr. Elliott cited the instance of a shipment of wood from Aldrich, Minn., to Elk River, Minn. Movement of the car from Staples to Aldrich consumes one day. Two days allowed for loading. After loading movement back to Staples consumes one day. Movement Staples to Little Falls consumes one day. Little Falls to Elk River consumes one day. Two days free time allowed for unloading. After which it must be taken to some point for loading, presumably to St. Paul. In this instance 9 days have been consumed in moving that car 107 miles, allowing nothing for extraordinary delays in loading or unloading, on account of weather, or for any other reason. If there were 15 tons of wood in the car and the haul was 107 miles there would have been produced 1,605 ton miles.

For comparison, he stated that a similar car could have been loaded with freight at St. Paul and moved 1,900 miles to Seattle in the same time. Many cars moving from St. Paul to Seattle carry 20 tons of freight each. 1,900 miles with 20 tons of freight means 38,000 ton miles, which could have been made by a freight car in the same 9 days required for the movement of 15 tons of wood 107 miles from Aldrich to Elk River. (Pages 3138, 3139.)

If a carload of potatoes be shipped from Glyndon, near Dilworth, to Starbuck, on the Little Falls branch, approximately 200 miles, as in the Elk River case it

would require approximately 9 days to complete the transaction, or 22 miles per day for the car. If the same man dealing in potatoes shipped to Beach, N. D., there being main line all the way, the transaction would have been completed in 7 days and movement of 379 miles affected, or 55 miles per day, or 2½ times as much as the distance made in shipment from Glyndon to Starbuck.

If the potatoes were shipped from Groningen on the St. Paul & Duluth line, to Breckenridge it would require about 10 days, or 25.7 miles per day. A shipment from Groningen to Dickinson, N. D., would require about 10 days, and the car would produce 58 car miles per day.

If cedar posts be shipped from Tamarack, on the line between Duluth and Brainerd, to Red Lake Falls, 238 miles, it will require about 10 days, or 23.8 miles per day.

If cedar posts be shipped to Chalmers, N. D. (instead of Red Lake Falls, Minn.) the movement would be 650 miles, which would be done in 10 days, or 65 miles per day—nearly three times as much use of the car as in the Tamarack Red Lake Falls shipment.

If car loaded at Duluth for intermediate points between Brainerd and Hayden, 6,000 pounds weight in the car would be their average, the distance would be 123 miles. The average of the freight rate on first four classes would be roughly 20 cents. The car would earn $12 in this movement. 5 days would be required to perform the service and release the car. If similar shipment from Duluth to points between Carlton and Deerwood, average haul of 71 miles, average rate 15 cents, load 6,000 pounds, $9 would be earned.

Instead of either of the services last mentioned, that car could have been loaded with merchandise from Marshall-Wells & Co.'s concern at Duluth to Spokane. If a light load of 15,000 pounds be assumed, and a rate of $1.75 per hundred, the company would receive $262.50, and the car would be in use from 7 to 8 days, and when released at Spokane could be there immediately loaded for other service. Or if the car were loaded with pianos at St. Paul for Walla Walla the minimum weight would be 12,000 pounds, rate $2.75, total revenue $322.00, which the car would earn in 10 days. (Pages 3139, 3140, 3141.)

Cost of repairs of equipment—21 per cent of all expenses—is four to six times as much per ton of local as per ton of through freight.

Mr. Elliott expressed the opinion that the failure to utilize cars to a greater degree in local business means that the cost of maintenance of equipment in local business is necessarily far and away greater per ton handled than is the cost in through business, that the mere fact of the more frequent switching increases the strain on the car, damages the draw-bars, knocks out the end-posts, and the more frequent loading and unloading damages the body of the car, breaks out ends sometimes, knocks the door off, creates a great deal more expense often than will be created in the long-haul through movement. (Page 3141.)

Again assuming that there are only 5 tons in a car for local business, it requires nearly 4 times as many cars to make the same number of ton miles as would be made in the long-haul business, and this without taking into account the slower movement of the local

car or the fact that it stands around idle more than is the case with the car moving between large centres. If a lighter load and smaller movement be considered, it is probably not unfair to say that it takes from 10 to 20 freight cars in short-haul local business to produce as much ton mileage as one car will produce in the long-haul through business. (Page 3142.)

That *repairs on equipment* on the Northern Pacific amount to *21 per cent of all expenses* and cars in local service are used to less than their capacity, and more of them are used in comparison to the results produced than in the through business. *The local equipment repairs per ton of local freight are above the equipment repairs per ton of freight on through business and must from the examples given be probably four or five or six times as great.*

The wear and tear of permanent way is much greater.

That the wear and tear of the permanent way must be considered. Tracks are worn out by the blow given by the wheels and by the friction of the wheels passing over the rail. The rail is driven into the tie, the tie into the ballast. The tie is worn out and is moved in the ballast. It requires labor to repair the track. The joints of the rails are hammered by car wheels and if low joints are made the metal is rubbed off the rail every time it moves. A freight car has 8 wheels and each strikes a blow every time it goes over a rail. A through freight will have 18 to 20 tons of freight on the 8 wheels, so that the wheel blow and the consequent damage to the track is distributed among 18 or 20 tons. The local car will have from 3 to 10 tons of freight and the wheel blow and friction is dis-

tributed among the 3 to 10 tons of local freight. The wear and tear per ton of freight handled is greater for local tonnage than for the through. It is true that the heavier weight in the through car should be taken into account, but it is not enough to offset the fact that the chief damage to the track is done by the general rolling weight of the car. If you run empty cars and nothing else, damage would not be quite so great as if they were heavily loaded. It is not fair to say that the charge for wear and tear, because of the lightly loaded local car, is in exact proportion of the heavily loaded car, because the heavily loaded through car should receive a little more of the total damage on account of the extra weight, but per ton of freight carried in the local car the damage to the track is very much greater than the damage to the track per ton in the through car, and the excessive switching incident to local freight increases the wear and tear at all smaller stations where cars must be moved several times often in order to place them properly at an industry. (Page 3143.)

Mr. Elliott's Conclusions and Reasons Therefor Summed Up.

It appeared from Mr. Elliott's testimony that the average haul of intrastate freight in Minnesota is 104 miles and a fraction, or less than the average length of an operating division (Pages 3194, 3195), and that the average length of haul of interstate business which touches Minnesota, 485 miles and a fraction, averages a little more than three times the length of the longest Minnesota division (page 3195); that the

cost per ton per mile would be lesser on a long-haul embracing several divisions than it would be through one division (pages 3196, 3197.)

It appeared that even Minnesota wheat hauled to Minnesota markets over a considerable distance and in heavily loaded cars is mostly handled or picked up by local trains, and that the great bulk of it is handled at least once by local trains (page 3199), and that the distribution of the empty cars for wheat-loading is done in part at least by local trains (pages 3199, 3200.)

He said: "So, take it all in all, the fact that you have this spasmodic business on the local and branch-line part of your railroad, the lighter trainload as a whole, the lighter carload as a whole, the fact that your business is not apt to be 'well-balanced,' as we call it in our language, or to put it in another way, the fact that you are more apt to have empty cars in one direction or the other for the local business, the fact that you have to haul cars for local business from a distance, sometimes empty, in order to put them into the train, (the readiness-to-serve features which I have tried to point out,) the rather higher wages, and these various items that I have indicated, all lead me, very conclusively, to the conclusion—which I have not arrived at since I came to Minnesota, because I had it in Missouri and had it before these rate cases came up—*all lead me to the conclusion that the so-called local short-haul intrastate business costs anywhere from three to six or seven times as much as the so-called long-haul through interstate business.* I claim you cannot reduce it to a mathematical certainty—I know I cannot and I don't believe any one can—but taking

your experience watching your daily reports, going out over the road and seeing the difficulties that confront the superintendent and the agent and others engaged in the business, I have come to the conclusion that this so-called local short-haul business is very much more expensive than the through long-haul, and have further come to the conclusion that, insensibly, the railroads through their managements and the state commissions in their very honest attempt to adjust rates properly and to protect various jobbing centres and to expand trade, have lost sight of the elements that create this extra cost and that, between us both, we have forced these local short-haul rates entirely too low and that the shortage is being made up, for the time being, because the longer-haul rates pay some margin of profit; but if the longer-haul rates are being shaved and the shorter-haul rates are being shaved there will be some railroads that will not have a balance to go on." (Pages 3143, 3144.)

By the expression in the statement above quoted, to-wit, "all lead me to the conclusion that the so-called local short-haul intrastate business costs anywhere from three to six or seven times as much as the so-called long-haul through interstate business," Mr. Elliott meant to compare the average cost of the intrastate business with the average cost of the interstate business. (See pages 3197, 3198.)

Before assuming charge of the Northern Pacific Company, Mr. Elliott was for many years employed in various official capacities by the C. B. & Q. Company, and was especially familiar with that part of that system situated in southern Iowa and Missouri, as well as in Illinois and Nebraska. He testified that

the conditions affecting relative cost of the short-haul business and the long-haul business in Missouri on the C. B. & Q. were not dissimilar to the conditions touching that question in Minnesota on the Northern Pacific, and in so far as the conditions are indicated by his testimony to be different they are more favorable to lower cost of intrastate business in Missouri. (Pages 3201, 3202, 3203, 3204.)

Testimony of Frank E. Ward, Formerly General Manager of the Great Northern.

(References are to record in Great Northern case.)

Complainants' Exhibit 53—Ward, in the Great Northern case is similar to Complainants' Exhibit 80—Elliott in the Northern Pacific case and shows mileage in system as follows: Main track, first, 6,687.98 miles; main track second 127.50; main track, other 22.33; total main track, 6,837.81; sidings, spurs, yard tracks, leased tracks, and trackage aggregate 1,709.52, making total tracks in system 8,547.33.

Mileage in Minnesota: Main track, first, 2,056.07; main track, second and additional tracks, 99.81; side tracks, 623.42; total tracks in Minnesota 2,779.30.

The exhibit also gives a statement of equipment and shows average capacity of cars to be 35 tons.

The exhibit also gives traffic statistics: tons of revenue freight carried, tons of revenue freight one mile, freight revenue, tons revenue freight per train mile, and tons revenue freight per loaded car mile; and corresponding statistics with respect to the passenger business: passengers carried, passengers carried one mile, passenger revenue, and average distance carried in miles.

Traffic in Minnesota, Mesabi Division, statistics are given, showing intrastate tons one mile in Minnesota to be 6,184,054, tons one mile interstate touching Minnesota 801,517,692, total 807,701,746, indicating that the intrastate tons one mile, Mesabi Division, constitute about *0.76 per cent* of total state and interstate touching Minnesota, Mesabi Division.

Iron ore, Mesabi Division, tons one mile, 575,234,319, constituting about 70 per cent of the total ton miles on that Division. Average haul, intrastate, Mesabi Division, 36.9 miles; interstate touching Minnesota, Mesabi Division, 237.5 miles; average haul *in Minnesota*, interstate touching Minnesota, 99.4 miles; total Minnesota intrastate and interstate touching Minnesota, 98.1 miles. Average haul of iron ore *in Minnesota*, 91.8 miles, total average haul iron ore, 111.7 miles. Revenue per ton mile in Minnesota, Mesabi Division, intrastate, 1.940 cents, interstate touching Minnesota, 0.522 cent, total Mesabi Division, 0.533 cent. Iron ore, Mesabi Division, revenue per ton mile, .00442 cent.

Other divisions in Minnesota, excluding Mesabi Division: Tons one mile in Minnesota, 165,133,712, interstate touching Minnesota, 1,150,909,275, total 1,316,042,987, indicating that Minnesota intrastate ton miles constitute about 12 per cent of total ton miles, excluding Mesabi Division.

Average haul, other divisions in Minnesota, *excluding Mesabi Division:* Intrastate, 116.9 miles, interstate touching Minnesota, *621.0* miles, interstate touching Minnesota hauled in Minnesota, 181.0 miles, average haul *in Minnesota* total intrastate and interstate touching Minnesota 169.3 miles. Revenue per

ton mile in Minnesota, all divisions excluding Mesabi Division, 1.360 cents, interstate touching Minnesota, 0.791 cent, total 0.863 cent.

Mesabi Division, relation of revenue per ton per mile from local traffic to interstate traffic, *3.71 to 1.00.*

Other divisions in Minnesota, excluding Mesabi Division, relation of revenue per ton per mile from local traffic to interstate traffic, *1.72 to 1.00.*

All divisions in Minnesota; tons one mile, intrastate, 171,317,766, interstate touching Minnesota, 1,952,426,967, total 2,123,744,733, indicating that of the total ton miles intrastate and interstate touching Minnesota, intrastate constitutes about 8 per cent. Average haul intrastate, 113.3 miles, interstate touching Minnesota, 411.8 miles, interstate touching Minnesota hauled *within Minnesota,* 152.0 miles; average haul of total in Minnesota, 148.0 miles. Average per ton per mile in Minnesota, 1.381 cents, interstate touching Minnesota, 0.681 cent, total, 0.737 cent. Relation of revenue per ton per mile from local traffic to interstate traffic, *2.03 to 1.00;* average total haul of all interstate traffic touching Minnesota, except iron ore, 557.6 miles.

That of the interstate freight touching the state of Minnesota, from 14 to 17 per cent of the ton miles made within the state are made by freight passing entirely across the state, without receiving any terminal service within it, nor any yard service within it, except what is involved in breaking and making up trains in divisional yards.

Mr. Ward was, from 1890 until shortly before he testified, employed in an official capacity upon the Great Northern Railway. He was secretary to the

president, assistant to the president, general superintendent Montana Central Railway, general superintendent Great Northern Railway, and general manager of the Great Northern Railway, successively, and at the time of giving his testimony was the general manager of the Chicago, Burlington & Quincy Railway.

After calling attention to the statistics contained on Exhibit 53—Ward, the witness expressed the opinion that not more than *30 to 35 per cent of the total more than 2,000 miles of main track in Minnesota would be classed as strictly main line railroad in operation, as distinguished from the branch line operation.* He said that the line from St. Paul to Breckenridge was main line; that the line from Minneapolis to the state-line on the road from St. Paul to Duluth, to a point between Foxboro and Dedham, was main line; that the line from East Grand Forks to the state line of Wisconsin near Superior on the direct east-and-west line going through Cass Lake was main line; the rest of the lines within the state, considered from an operating point of view, was branch lines. (Pages 1081, 1082, Vol. 3 G. N.)

Length of Haul.

Calling attention to the statistics contained in Exhibit 53—Ward, and especially the average length of haul of Minnesota freight and of interstate freight touching Minnesota, and the large volume of interstate iron ore tonnage moving principally in Minnesota, Mr. Ward expressed the opinion that the average length of haul of freight, state and interstate, has a very marked effect upon the cost of doing business per

unit of transportation or per ton per mile. (Page 1082.)

Among the reasons given for that opinion Mr. Ward stated in substance as follows:

That the state business having a short haul of necessity carries with it a much heavier terminal charge per ton per mile, probably measured by comparing the distance, as *113 is to 557.6*, which is the total, excluding iron ore. (Page 1082.)

The average intrastate haul of 113 miles is but very little over the average length of the engine division. (Pages 1115, 1116.) The minimum economy would only be reached when figuring the cost on one railroad, like the Great Northern, if the freight moved over the entire length of the line, because as the length of haul is reduced the cost per ton per mile of each unit in the train is increased, the terminal expenses being divided into the ton miles. (Pages 1116, 1117.)

State Business Moved Largely by Way Freight Trains. Elements of Extra Cost.

That the state business, by reason of its short haul and also by reason of the character of the freight handled, is handled largely by way freight trains.

Those trains require in many cases more men than do main line through freight trains, and the men in the crews receive a higher rate of pay than do the men on the through freight trains.

The way freight trains, which carry so large a percentage of the intrastate business, are of necessity light trains. They are handled by lighter and less economical engines as measured by costs per ton mile

than are through freight trains, and they carry a smaller percentage of the business.

The nature of the business, on account of its short haul, largely affects economies in the handling of equipment. The average loading per car is of necessity very much lighter, and the use made of the car, aside from the light lading while it is in service, is very much less.

There is a good deal more idle time of cars because of time consumed at the loading and unloading points, which, by reason of the short haul, are more frequent in occurrence than is the case with the long-haul business. (Pages 1082, 1083.) The short-haul intrastate business being handled in local trains is in cars which are more frequently coupled on to and handled by engines.

The chances for injury occur very much more frequently in the case of this short-haul intrastate business than in the case of the long-haul, which goes long distances without being touched or without the train stopping, and it is not in the running of the cars but in the starting and stopping and coupling and uncoupling of them that injuries to equipment occur to a very large extent. (Page 1093.)

That the matter of loss and damage in the handling of the short-haul shipments, particularly less than carload, is quite a serious item. The freight is handled a good many times. The chances for pilferage and for damage is great, and the excessive amount of handling of cars by the engines results in a good deal more damage to the freight considered as carloads. (Page 1083.)

That another element is the growing cost of lumber of which the packages are made, and the fact that shippers resort to the use of frail packages made of paper, in many cases not strong enough to safely carry the commodities enclosed within them. These are more easily damaged by other freight falling upon them and it is harder to load the cars as heavily by reason of the frailty of these packages. It is easier to pilfer from these packages. (Page 1083.)

The amount of property furnished by the railway for the handling of the state short-haul business is relatively very much greater than it is in the case of the long-haul business.

The station facilities at local stations all through the state are, when measured by the ton mile, used to a very much greater extent than is the case of through business passing those stations.

On the branch lines composing a very large proportion of the Great Northern in Minnesota, the trains are of necessity light for another reason than the fact that the contents of the car is small. Those trains have to start from one end of a branch or another light, picking up, and this means that over a very considerable portion of those branches the power is not used to its maximum efficiency. Or the reverse may be true, the train may start out loaded and before it reaches its destination have a very much lighter load than the engine is capable of, resulting in a higher cost per ton per mile for the freight that is handled. (Pages 1083, 1084.)

That the damage to equipment is a very important feature in the handling of short-haul business, particularly that business handled on way freight trains.

Equipment is not handled very frequently when it runs from one terminal to another in through freight trains. The damage which it receives is to a very large extent in switching at terminals and on the road, and in the case of way freight trains, making stops at every station and doing more or less switching at every one of these stations, the chances for damage and the actual damage are multiplied very considerably. (Page 1084.)

That the risk of personal injury is likewise multiplied by the same causes. The men are obliged to cut (uncouple) cars, handle brakes and be actively engaged in the handling of the moving equipment to a very much larger extent on those trains than they are on through trains which run on from terminal to terminal without breaking the train. (Page 1084.)

That it follows from what he said that the handling of those trains with light tonnage means the use of a great many more trainmen to handle a given number of ton miles. The ideal condition from an operating standpoint is one where can be used the largest and most economical engines and each engine loaded to full capacity on every trip, and just to the extent that this cannot be done the expense increases by reason of necessity for running additional train miles for the unit of expense per train mile, particularly in wages, is fairly constant.

With the exception of way freight trains, which have additional men and for which additional rates are paid, it costs just as much to run a light train as a heavy one in the matter of wages of the crew, and pretty closely so in the matter of fuel consumption and engine service.

The handling of state business or other short-haul business is the condition most removed from that ideal condition of operation, and therefore the most expensive. (Pages 1084, 1085.)

The establishment of intermediate distributing centres like Fergus Falls, St. Cloud, Crookston, East Grand Forks, and Moorhead—those centres specified by the Commission in its orders—has tended to increase the expense of handling state business. That works out so that the local dealer is solicited for his business by more people, and his business will be distributed from different centres, so that the opportunity for loading a car—for instance, from St. Paul or Minneapolis—under the old plan,—when those were the only distributing centres, does not exist to the same extent because the freight received by the business men at the smaller towns is purchased from not only those big centres but the smaller centres. In the efforts of the railway company to exercise economy in the handling of its equipment it is obliged to have not only two terminal and station expenses in the handling of the state freight, but in some cases three or four, by reason of the necessity for consolidating those shipments at junction points in a way to avoid the further unnecessary use of car miles. (Page 1085.)

Mr. Ward illustrated the point last made as follows: A merchant at Greenbush purchases goods at Crookston, and other classes of goods at Grand Forks, and others again at St. Paul, possibly he would buy others of his goods at Fargo or Moorhead, and others at Duluth. Under the old arrangement under which the distributing rates were made only from the larger

centres, he would probably buy all of his stuff in St. Paul or Minneapolis, and the car moving the same would go directly to destination. Under the present method under which his purchases are distributed between different centres, his freight from St. Paul and Minneapolis will go to Redlands intact, that from Moorhead will go to Redlands, that from Crookston will go to Redlands, and there it will all be consolidated. The equipment is delayed and the warehouse expense and clerical expense of arranging these shipments is incurred a second time. That may happen in many places, and does happen. (Pages 1085, 1086.)

In cases of interline interstate business, for example, less than carload shipments originating at Chicago coming to the Great Northern at Minnesota Transfer for delivery to some Minnesota station, the terminal expense at delivery end is the same as an intrastate shipment, but at the originating point in Minnesota the expense would be less. Such a shipment would undoubtedly come in a foreign car to the transfer, which has facilities for handling the exchange of business between all lines that enter that point. The expense there would be divided between the lines involved, and in no case would it exceed one-half of the expense that would be attached to shipments originating at St. Paul or Minneapolis. (Page 1087.) All of the tonnage passing through the transfer is counted, both for the road which brings the tonnage in and for the road which takes it out, and the total expense of the Minnesota Transfer is apportioned among the roads that are members of that company in proportion that their tonnage bears to the total. (Page 1106.)

If such an interstate shipment be from Chicago via Minnesota Transfer and westerly on the line of the Great Northern to a point in Dakota, the only terminal service in the state would be that rendered at the Minnesota Transfer. (Page 1087.)

As respects carload shipments interstate from Chicago via Minnesota Transfer and Great Northern to some point in Minnesota, the comparison would be much the same as in the case of less than carload lots, except that the cost per ton, on account of its being a carload, would be less; the road bringing it to the Twin Cities would deliver it at Minnesota Transfer and the tonnage in the car would be counted against the road bringing it in and against the Great Northern taking it out, and the terminal expense attaching to that car would be simply the switching necessary to take it from the assigned delivery track in the Minnesota Transfer to the train yard of the Great Northern Railway.

In the case of a car originating in St. Paul or Minneapolis, if it originated on a team track, or on a private industry track, it would have to be switched by the Great Northern Railway Company from that point in the first place to the Minnesota Transfer up the hill (which is expensive) and into its train yard, and it would have to bear in that case the whole expense instead of a part, and that whole would be considerably greater than twice the half of the other expense, for the reason that the Great Northern would have to perform the entire service from the actual point of loading to the train yard. (Pages 1087, 1088.) In case such car (that is, a car originating east of St. Paul and coming to the Great Northern at Minnesota

Transfer) was destined to a point on the Great Northern beyond Minnesota, the only terminal service to be rendered in the state would be that of the Minnesota Transfer and the Great Northern would only have to bear its share of the Transfer expense (Pages 1088, 1089.)

Exhibit 53 Ward indicates, as above mentioned, *that 14 to 17 per cent of the ton miles made within the state are made by freight passing entirely across the state without receiving any terminal service within it.*

Mr. Ward stated that he knew in point of fact that there was a great deal of such freight, and instanced the coal business loaded at Superior and destined to Dakota points, of which there is a very considerable volume, and the wheat business going the other way, i. e., from the wheat fields in the Dakotas to the Great Northern terminals and elevators at Superior. (Pages 1089, 1090.)

He compared the terminal service rendered by the Great Northern and in Minnesota on such shipments with like terminal service on similar shipments which are Minnesota intrastate, and said that in the transstate business there is no terminal expense excepting the transportation expense at engine terminals of changing the engines and cabooses of the trains, and in case of intrastate business there is the terminal expense at both ends of assembling the business from the loading tracks and placing it in train yards, and at the delivery point of taking it from the train yards to the unloading tracks, and also the clerical expense of billing. (Pages 1090, 1091.)

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He said that "terminal expenses" would not include switching at divisional points where trains are rearranged or made up; that in his testimony he did not have that in mind as a terminal expense; that it is a transportation expense incident to the movement of the business from place to place, and not connected with the terminal expense of assembling it and getting it ready to become part of the train; or the service at the other end, taking it out of the train and placing it where it can be unloaded, and of unloading it in case of less than carload. That is, the terminal expense referred to has to do with the receipt of the property from a shipper or a connecting carrier, and at the other end it is providing for its delivery to the consignee either by unloading the car in case of (less than) carload lots, or in case of carload lots setting the car where it may be unloaded by the owner. The switching intermediate between those two events is incident to the transportation and is not to be regarded as a terminal service. (Page 1091.)

Excepting ore, the average haul of interstate business touching Minnesota is about five times the average haul of the Minnesota intrastate business. On the basis of ton miles of one class compared with the other, the *terminal service* per unit would not be less than *five times as great* in the case of the state business as in the case of the interstate business. I should say five times would be approximately the relation that one would bear to the other. (Pages 1091,1092.)

If there be assumed the same amount of capacity for interstate as for state, and that there is equal terminal service on the interstate in Minnesota as on the intrastate, the *single fact* that the average haul of one

is five times as great as the average haul of the other would indicate that the terminal service to the unit of the state business would be on the *average five times* as great as the unit for interstate business.

The average loading would be considerably less in case of the state shipment, and this would very considerably increase the cost per ton mile for station service by reason of the greater use of the facilities. There being less terminal service in interstate business than in state business, per ton, per package, or per car, the relative cost of the state business would be increased. (Pages 1092, 1093.)

Mr. Ward never knew of accounts being kept to show cost of interstate business separately.

I never knew of any accounts being kept which showed or purported to show the cost of doing intrastate or the interstate business separately from the cost of doing the other business, either in the freight business or in the passenger business, either while I was general manager of the Great Northern or at any other time.

I have in a general way given attention to the subject of the cost of the short-haul as compared with the long-haul business. I have been observing conditions for a good many years and have noted the conditions affecting the different classes of business which have been hauled on the roads that I have been connected with, and in that way have formed an opinion as to the relative costs of business done under different conditions. (Pages 1093, 1094.)

Mr. Ward's Conclusion.

"Q. Now, I would like to have you state what in your opinion is the relation of cost for doing the business in the freight business of the Great Northern road between the intrastate business having an average haul of 113.3 miles and the interstate business touching Minnesota (excepting iron ore) having an average haul of 557.6 miles.

A. I haven't got any means for mathematically determining what that relation is, but from my observation and experience *it is my judgment that the cost is somewhere from four to six times as great for the strictly state business as compared with the interstate and trans-state business.*" (Page 1904.)

* * * * * * * *

"The cost of handling intrastate business per ton mile is in my opinion four to six times the cost of handling interstate business per ton mile." (Page 1121.)

I never kept any account so as to find out what the relative cost was, because I do not believe such a thing is practicable to a mathematical certainty, and assuming that it is not practicable to a mathematical certainty, I hardly think it is susceptible of ascertainment to what might be called a definite approximation. I have never been able to figure out a definite way of determining that. (Page 1122.)

Testimony of William B. Doddridge.

(References are to record in Great Northern case.)

Mr. Doddridge is a railroad man of great experience. He has been connected with the Panhandle road, the Union Pacific, Missouri Pacific, St. Louis & Southwestern, and since 1900 was engaged in expert railroad work, making examinations of properties for bankers, capitalists, railroad companies and during the two years preceding his testimony was pretty con-

stantly engaged in railroad rate cases in the state of Missouri and in Arkansas rate cases now pending. He was called as a witness for the eighteen roads in the Missouri rate cases. (Pages 1143, 1144, Vol. 3, G. N.)

He has considered the cost of doing intrastate business as compared to the cost of doing interstate business, and before going upon the stand examined Exhibit 53 Ward, and had read the testimony given by Mr. Ward in this case, and had also read the testimony given by Mr. Elliott in the Northern Pacific case.

He expressed the opinion that the cost of moving intrastate freight business is relatively greater than the cost of moving interstate freight business in the states west of the Mississippi River and bordering upon that river. (Page 1144.)

Length of Haul and Other Elements — Producing Extra Cost.

That the principal reason is the proportionate length of the hauls between the two classes of business. The state traffic is made up of relatively small units, whereas the through business is either of a distributive or a collective character, and by "collective character" is meant it originates at various points throughout the state, whereas the through business is massed at central points and moved in a large volume. Except in special cases there is not in the state traffic the heavy traffic density that prevails with respect to the other class of traffic. (Pages 1144, 1145.)

That each shipment of intrastate freight has the expense of two terminals within the state. The word "terminal" as used means the receipt, the handling, the way-billing, the accounting and forwarding of the traffic on its receipt. The interstate freight, if it is of a trans-state character, passes through the state without this class of expense and may have no terminal in that sense within the state. Interstate traffic originating beyond the state line and having destination within the state would have but one terminal expense chargeable to the state. (Page 1145.)

The state freight is largely carried upon local trains —made necessary by the distributive character of the business. These trains are run daily, except Sundays, regardless of the tonnage to be moved. They cannot be operated to their full tonnage efficiency. *The result is they do not produce more than one-fourth the ton miles per train mile of that produced by the through train.*

The runs are shorter, and when traffic is heavy the train crews handling those runs make considerable overtime every day, largely increasing the cost of transportation of freight handled by that class of trains.

The switching at the local stations is a source of great expense in the matter of the maintenance of equipment—arising from broken draw-bars pulling out draft rigging, etc.

In handling of the state business or the short-haul business there is a large excess in the use of equipment over that of the through business.

In a shipment moving ten miles the time for loading and unloading the car and the expense of switching it

at both ends would be identical with that of a shipment moving a thousand miles, therefore, the ratio of expense increases or decreases in proportion to the length of the haul. (Pages 1145, 1146.)

Referring to Exhibit 53—Ward, I notice that in the state of Minnesota the side track mileage is about 30 per cent of the main track mileage. In my judgment, *if there were no local business in Minnesota, not more than one half this side track mileage would be required to transact the through business of the road.*

The same condition, I judge, would prevail with respect to the necessity for local stations, perhaps in much greater proportion. (Page 1146.)

The extra expense attributable to the state traffic per ton per mile with reference to the *maintenance of equipment* in my judgment would run in proportion to the length of the haul. *That is, if the state haul was one-fifth of the interstate haul, on the basis of ton mile or car mile it would be 5 to 1.* (Page 1146.)

As respects the demand upon the services of agents, clerks, laborers, superintendents, train dispatchers and the like, in my judgment the extra cost would run in the same relative proportions. Station forces at local stations scattered throughout the state made necessary to handle that class of business are not utilized by railroad companies to their maximum efficiency per unit of service rendered, but in order to provide the necessary facilities to transact the business properly, their services as constituted are necessary, and in that respect it produces a higher cost of service than where there is a large volume of business moved. (Page 1147.)

There is an extra expense in handling the intrastate business in consequence of the necessity for making *large empty-car mileage*, with no return or reciprocal loading.

In a wheat-producing country the movement of grain probably continues for ninety days. Empty cars must be carried to meet this demand.

The same principle applies in a movement of live-stock. Stock cars, being of a special class, cannot be used for freight subject to damage, therefore there is an empty-car mileage created in handling that class of traffic.

The business of the state taken as an average *moves more or less spasmodically* in these respects, whereas, by comparison with through traffic, usually there is a balance of tonnage moving in both directions, enabling the management of a railroad to more economically utilize its equipment and work it closer to its maximum efficiency. (Page 1147.)

Mr. Doddridge's Conclusions.

Taking all the circumstances and conditions into consideration prevailing in Minnesota as indicated by the figures contained in Exhibit 53—Ward, my judgment is that upon the basis of ton miles, excluding the Mesabi ore traffic, the ratio of extra cost per ton mile of the intrastate Minnesota freight is at least three times, and maybe four times, as great as the interstate (Page 1148.)

Mr. Doddridge has never known any system of accounts to show separately cost of intrastate or interstate business.

I have never known of any system of accounts to be kept for the purpose of keeping, as a matter of accounting, separately, the cost of doing the intrastate business and the cost of doing the interstate business. I do not know of any railroad company that has ever attempted to do this with mathematical certainty, and in fact *I feel safe in saying that it would be impossible to do so in that manner.*

The difficulty that is presented in keeping any such system of accounts is that the expense of the various classes of traffic are largely common and cannot be identified other than upon some arbitrary basis. The state lines in that respect are artificial barriers, and the railroad companies in the management and operation of their properties consider the whole as a unit, and *any separation of the expense must necessarily be made a matter of some one's opinion as to their apportionment, and one of the chief difficulties would be to meet the changing conditions from day to day and from month to month that occur in the operation of a railroad.* The cost of transportation in one month with another may vary with changes in conditions fifty per cent. (Page 1148.)

"Revenue Basis," "Ton Mile Basis" and Other Bases for Dividing Expenses Between Intrastate and Interstate Business.

From the consideration that I have given this subject I have come to the conclusion that the best method

of determining the expenses as between interstate and intrastate traffic is upon what is called the basis of gross earnings derived from each.

The *ton-mile basis* is merely a mechanical unit and represents only one of many elements of the real cost of transportation. It is valuable for purposes of a limited class of comparisons. It deals with but one element, that is, the weight and distance.

Railroad companies in making their tariffs upon which their charges are collected first prepare a classification dividing the property into thousands of combinations. Generally there are ten different rates per hundred pounds between the same points, and other rates in addition. These rates, in connection with the classification, take into consideration the *space* occupied by the freight, the *value* of the commodity, the *risk* of loss and damage in its transportation, and the *value* of the service to the shipper.

The rates for short hauls are higher than for long hauls, and by using the sum of the gross earnings upon which to apportion the expenses, you have a representative figure that takes into account all of these items, and the expenses are apportioned equitably between the different classes of traffic *in the proportion and upon the same basis upon which the rates were adopted,* the rate representing the ratio of the cost and value of the service. Why should it not also represent the amount of expense of transportation attributable to that particular article? (Page 1149.)

I do not consider the train or *car mile* useful for such apportionment at all. The car mile and *train mile* would carry the same general objections that obtain in the ton mile. (Page 1150.)

Impossible to keep accounts so as to show separately cost of each class.

The division of cost between state and interstate freight, or state passengers and interstate passengers, is complicated and uncertain. The business is carried in the same cars, handled by the same men, proportions relatively from day to day changing. The same question would come up, for instance, in the breakage of cars and the handling of the local business. A car might receive $25 damage, and it might contain and carry to that station both classes of goods.

It would be a matter of physical impossibility to apportion and trace out all of those small items and properly allocate the proportion between the state and interstate business. It would require an enormous force of men to come anywhere near doing it, and when the reports were centralized and brought into concrete form, even then it would become a matter of arbitrary judgment how the division should be made. (Page 1151.)

This is true as respects both the freight and passenger business and the division between state and interstate cost of each. (Page 1151.)

Results the same in States on west bank of the Mississippi River.

In the states on the west bank of the Mississippi River the average aggregate results, in my judgment, are substantially the same. *For instance, in the state of Minnesota you have one special class of traffic, iron ore, which does not prevail in any other state and which cannot be compared to any other traffic for the simple reason that there is no other traffic moving under the*

same circumstances and conditions with which to compare it; but in other respects we have substantially the same conditions, about the same amount of carload freight, varying of course somewhat in its detail.

In Minnesota you raise a good deal of wheat, in Missouri we have a great deal of coal. In Louisiana and Arkansas the preponderance of business probably runs to products of the forest, which you also have in Minnesota. The conditions substantially are the same in that respect, except that in the state of Missouri we have on both borders of the state, large cities, concentrating points, distributing points, namely the cities of St. Louis on the east and Kansas City, St. Joseph and other Missouri river points on the west. *This fact creates a traffic condition in Missouri somewhat more favorable to reducing the ratio of cost of moving intrastate traffic.* That is because there is a good deal of state business across the whole state from St. Louis to the big centres on the western boundary of Missouri and that condition, as I understand it, does not prevail in Minnesota. (Page 1152.)

Testimony of Chester J. McPherson.

(References are to record in Great Northern case.)

Mr. McPherson is assistant to the general manager of the Missouri Pacific. Has been engaged in the railroad business 31 years. Began as a telegraph operator in Michigan and successively filled the position of station agent, train dispatcher, general yard master, chief clerk to general superintendent, master of transportation, and his present position, which he had occupied for four years prior to testifying. The general

manager whose assistant he is has charge of operation of the Missouri Pacific system in eight states.

Mr. McPherson in the performance of his duties has occasion to observe matters and conditions affecting the operating expenses and the cost of conducting transportation of various kinds of traffic, and had given much thought and study to the matter of relative cost of doing business that is intrastate in the states served by his company, as compared with the cost of doing interstate business on the system and in such states. He was a witness in the Missouri rate cases tried before Judge McPherson in Kansas City. (Pages 1172, 1173.)

He examined the evidence in Exhibit 53—Ward, and had read a transcript—somewhat hurriedly—of the testimony of Mr. Ward. He had also examined the exhibit 80—Elliott, in the Northern Pacific case and had read nearly all of Mr. Elliott's testimony. (Page 1173.)

No Railroad Company by Any System of Accounts Undertakes to Divide Expenses Between Intrastate and Interstate Business.

He stated in substance as follows: That there is a very material additional cost or extra cost attending the conduct of intrastate freight business as compared with interstate business. No railway company by any system of accounts regularly undertakes to divide or does divide the total freight cost in any state as between the state and interstate business therein, because it is not a practical problem. (Page 1174.)

"Train Mileage Basis" is Commonly Used for Division of Operating Expenses Within a State Between Freight and Passenger.

Divisions of costs are made between freight and passenger business in each state by *some, perhaps all, the railroads,* but that is a different class of business and is susceptible of division, partially by the natural location of expenses, and partially by the application of some more or less arbitrary method. (Page 1174.)

In effecting such division, that is, division of total cost in the state as between the passenger and freight business in such state, *train mileage may be and is commonly employed for the apportionment of common items of expense to one kind or the other of the business.* By train mileage is meant the number of miles that passenger trains make and the number of miles that freight trains make taken together to divide common items of expense in proportion to the respective mileages. (Page 1174.)

There is no Unit for Dividing Freight Expenses Within the State Between Intrastate and Interstate Business Therein.

In the problem of dividing the total freight cost within the state between state business and interstate business there is no unit to which the cost of freight operation can be reduced—whether train mile, car mile, or ton mile,—that can be said to be a unit which may be employed to effect such division accurately or that will demonstrate in dollars and cents a truthful result. (Page 1174.)

The "Train Mile."

The train mile will not do because in the operation of a railroad several measures are used in the work, and the result is measured by earnings or the revenue. These units or these measures are those of miles made by trains and cars and by tons moved and the distance the tons are moved. These are the freight measures. The passenger measures of operation are the number of passengers transported and the distance they travel. The results of operation are measured by the earnings or the revenue received by the company for its work. (Page 1175.)

None of these measures will show exactly the difference in the cost of handling the traffic within the state and the traffic that is common to two states, but nevertheless they have certain values in railway operation. Train mileage is used as one of the features—one of the factors—in dividing the operation as between the passenger and freight service. But this measure could not be used to determine cost as between state and interstate freight service, for several reasons: The trains that draw the freight handle both state freight and interstate freight.

Again, freight trains move empty cars which yield no revenue, and the use of which, whether ultimately in interstate service or in intrastate service, cannot be determined.

Then again, trains are moved which are non-producing revenue trains, such as engines and cabooses, which must be moved possibly over a whole division light to get a train because the traffic is not equally balanced in both directions.

For these reasons the problem of dividing the cost of operation between state and interstate traffic on a train mileage basis would be impossible. (Pages 1175-1176.)

The "Car Mile."

Another measure used in railway operation is the car miles, and in operating statistics they serve a very useful purpose; but here again this measure cannot be used to divide the expense between interstate and intrastate traffic, for the reason that the car handles both classes of traffic in common.

Again, the cars contain varying quantities of tonnage, and the relation between the expenditure of energy required to move the gross tonnage—which is the tonnage of the freight and tonnage of the car—cannot be separated as between the revenue tonnage and the gross tonnage by any rule of car mileage.

Then, the purpose for which the empty cars that are moved will ultimately be used, cannot be determined and the expense apportioned. (Page 1176.)

The "Ton Mile."

As to the question of distance, of course the tons can be reduced to ton-miles by multiplying the number of tons by the miles moved, and this might apparently seem to be a fair basis for dividing the expense perhaps of the service given to state and interstate freight.

Ton mileage statistics are useful to the railway company and measure the efficiency of operation, but, while apparently the factor of ton miles would solve this problem, *an analysis of the conditions and the way*

the ton miles are made up show that the use of this unit in the division of expenses as between state and interstate traffic would possibly give results as wide of the mark as would the use of train miles or car miles.

If the tonnage unit were adopted for this purpose we would have to assume that *all commodities* could be reduced to a *common basis of transportation cost;* furthermore, that a *long haul* and a *short haul* could be made on the same pro rata of cost; it would assume that the *efficiency* of *engines* and *cars* was equal in *all classes* of traffic and would embrace in the cost of moving all traffic *facilities* that certain divisions of that traffic do not and cannot use.

Again, that basis of consideration would eliminate the different conditions that exist between railway companies and the different conditions that exist on divisions of the same railway.

It would likewise exclude any extra labor cost incident to moving either the state or interstate traffic.

The assumption that all commodities can be reduced to a common basis of transportation cost fails to take into account the character, value, and risk attached to their transportation, whether the traffic is moved in carload lots or in less than carloads, whether the loading and unloading is done by the owner of the freight or by the railway company; if the former, the owner of the freight would do the loading and unloading of the freight at his own cost; if the latter, the loading and unloading would be done at the cost of the railway company.

It is manifest to any one who observes the operation of the railway that the merchandise and manufactured

articles, which we denominate as less than carload freight for physical reasons will not load a car anywhere near to its capacity. The cost therefore of handling less than carload freight bears heavily upon the railroad, not only in the failure to secure a full load of freight—or perhaps I might say an average load of freight—but also in the fact that more cars are required to reach the equivalent of the average carload of freight, and more switching is necessary in the yards to set the cars to the freight houses and to return them to the train yard for this class of freight than in the full carload traffic.

I would say that the experience generally that I have had is that this less than carload traffic will not reach one-third of the average loading of all classes of traffic per car, measured in tons.

The cost to a railway company in the actual freight house work, in the handling of less-than-carload traffic, is large because this is a package traffic and each unit must be received and weighed and loaded into the cars and accounted for—it is more in the nature of an express traffic—while (in) the commodity traffic the single billing of the car completes the preliminaries necessary to start it on its way.

With less than carload traffic a car may require an infinite number of way-bills describing to whom the freight is consigned, of what it consists, what it weighs and the charges to be collected. In the ratio I have expressed of probably less than one-third of the average tonnage being transported in an l. c. l. car, this station expense is embraced in switching the same ratio of additional cars for an equivalent tonnage, and in the handling of this package freight made up of

numerous units as against a single unit in commodity freight and a single car.

This expense of station operation which is created largely by the less-than-carload traffic is a controlling factor in establishing the number of employes required and the expense of conducting the station.

The ton-mile basis would bring the transportation of cattle and other livestock to the same basis of consideration as lumber or grain, and would put the number of cars of merchandise necessary to equal the equivalent in tonnage on a parity with one car of any of these commodities.

The three cars of less-than-carload freight, which as described have been loaded by the railway company at its own expense and which contain in the aggregate the average loading of one car of all traffic, would be by the ton-mile basis put on parity with one car of any other commodity, such as lumber, brick or cement.

In livestock a special service is required. It is essential that the movement should be continuous and uninterrupted, minus, of course, the time required to feed the stock in transit in observation of the 28-hour law.

In these illustrations the *character of traffic* is shown to determine the care which must be observed in its preparation and movement, and its value determines the risk that the railway company assumes.

For illustration, in the handling of livestock or perishable freight, the railway company will be called on to settle claims which could not arise from the handling of any other character of traffic—claims for shrinkage, extra feed, or lower market because of delay.

In the event of a casualty, the derailment of a train containing twenty-five or thirty cars of miscellaneous freight, the damage that the railway company might be called on to pay for one car of merchandise might be several times that it would be called on to pay for damage to all the balance of the traffic in the train, because merchandise is fragile and naturally would suffer most under such circumstances. In that case it is possible that five per cent of the ton-miles in that train would bear ninety-five per cent of all the cost of claims paid for that entire casualty,—that is, the claims paid to the owners of the freight.

State traffic, necessarily is made up very largely of less-than-carload freight. It is merchandise or the stocks of the stores that are vended to the public throughout the state; and the expense of its gathering —if I may use the word—and preparation for shipment is so very much greater than that of the commodity freight and of its distribution within the state, which is done at the expense of the company, that a practical operating man uses this in forming his judgment on the relative cost of the two classes of traffic.

The ton-mile basis of dividing the expenses of operation, even for railroad purposes, for its own purposes, would not show the railway company the cost of its operation, even in the state, applied to either state or interstate, and it would be equally useless in endeavoring to apply it to a division of the expenses of state and interstate traffic.

In other words, I mean to convey that the ton-mile basis does not divide the expense of handling the various kinds of traffic between itself on a just basis comparatively,—and if it fails in that respect it would fail

as a basis for dividing the cost of operation between the two classes of traffic,—state and interstate.

The ton-mile basis of dividing the expenses between state and interstate traffic would place a long haul and a short haul on the same pro rata basis of cost. From a practical standpoint, no one, I believe, will seriously contend that this is reasonable—certainly no operating railroad man.

The ton mile basis would fail to take into account the terminal part of a railway company's expense which forms a large item in the cost of railway operation. The controlling factor in terminal organization is the number of times that the terminals are used. This causes the employment of locomotives and men and the investment in facilities which a railway company must furnish for assembling and disposing of its traffic.

State traffic must in all cases have two terminals within the state, and each shipment of state traffic is chargeable with the use of the terminals twice,—in the beginning and at the end of the journey,—while interstate traffic makes use, generally speaking, of but one terminal within the state. The gathering and distributing expense of both is attached to the state traffic, while only one or the other attaches to interstate traffic within the state considered.

But it does not follow that because the state traffic uses the terminals twice the ratio of use of terminals between state and interstate traffic is as two to one. The length of haul must be taken into consideration, because the use of the terminals will be made by state traffic in its various lengths of haul as many

times as the interstate haul is a multiple of the state haul. To illustrate: If the state haul averages 100 ton miles and the interstate haul averages 500 ton miles, then the ratio would be as ten to one, rather than as two to one, for the reason that five state hauls of 100 miles each are necessary to equal the interstate haul of 500 miles. For the interstate there would be but one terminal service in the state, but for each of the five state hauls there would be two terminal services in the State.

Relative Use of Cars Not Taken Into Account by "Ton Mile Basis."

It is obvious that the short haul requires more cars to attain an equivalent of ton-miles with the long haul.

There is no general difference in railway practice anywhere in the middle west or in the Mississippi valley to which this would not apply. The general railway practice permits forty-eight hours to the shipper of freight to load a car and forty-eight hours to unload a car. This makes a delay of four days that the shipper has the right to use—possibly this is the law of Minnesota, I don't know—it is of some of the states. It is, however, ule which prevails on all the roads touching the west bank of the Mississippi river.

Applying this fact to the use of terminals to which I have just referred, each of the hundred-mile hauls would be entitled to four days' use of the car standing, that is to say, while it was not in motion. Multiplying that by the five hauls, would show a loss to the railway company of the use of the cars in the short-haul service of twenty days as against a loss of two days—that would be two days within the state—in the

long-haul service, which again *gives a result of ten to one.*

Relative Use of Terminals Not Taken Into Account by the "Ton Mile Basis."

The loss of the use of the car, as illustrated here, the greater use, or the more times that the terminals are used, would be totally unprovided for by a method of endeavoring to apportion the expense of a ton-mileage basis.

Relative Efficiency of Locomotives and Trains Would Not Be Taken Into Account by the "Ton Mile Basis."

The ton-mileage basis would further assume that the efficiency of locomotives and cars is equal in all classes of traffic. The broad distinction in transportation conditions everywhere is the *local* and *through trains. Only a sufficient number of through trains are moved,* at least in the operation of heavy traffic, to move the traffic, while with the *local traffic a railway must have a regularly established schedule service, and the trains must be run regardless of the volume of tonnage.*

In the handling of through traffic, therefore, the potentiality of the locomotives in tonnage is very closely realized, while in local trains, as a general average, even during the crop-moving period, is with rare exceptions attained.

The ton-mileage performance of a through train is an average of the number of tons it starts with multiplied by its miles to destination or to the objective point, while the average performance of a local train is affected in two ways: First, in the unloading

of the package freight from the cars as the train progresses, lightening the load of paying freight in each car, and, second, in setting out such loaded cars as may be destined to points on the district.

In *one direction*, the distribution of the initial tonnage before arriving at the objective point may be seventy-five per cent or even more. In the *other direction*—picking up carload commodities—the train may reach its objective point with a tonnage fairly equaling its rating, but it has not had this tonnage from its initial point, and the average of its performance of ton-miles will be very much less than of the through train.

In experience generally, the tonnage performance of local trains, measured by the ton-miles accomplished, will not reach more than *fifty per cent* of the through trains under the *most favorable circumstances*.

Locomotives drawing local trains require more frequent repairs than locomotives drawing through trains, because they are not only doing what the through trains do—moving the trains between the stations—but they also do the switching at local stations on the district, and might be called switching trains with equal propriety—traveling switching trains.

In this switching in the interior movements, away from the main track, moving over switches and irregularly back and forth, the strain is greater on the machinery, the wear and tear is greater as a result, and repairs must be more frequently made than with locomotives dawing through trains where the movement is straight-away and the momentum aids it.

The *efficiency* of locomotives in local service, in my judgment, based on my observation in the course of

thirty-one years of experience, is not more than *fifty per cent* of that of through freight locomotives, while the *maintenance cost is twenty-five per cent greater,* based on an engine of the same class and weight engaged in the through service. (Pages 1175-1183.)

Relative Car Efficiency Not Taken Into Account by the "Ton Mile Basis."

In the matter of car efficiency we probably can get a little closer to make this difference a little clearer. The average capacity of freight cars on roads which touch the west bank of the Mississippi river differs very little, ranging from 31 to 35 tons per car. This is taking all of the freight cars of every character into account. The average loading or average tons of freight handled per loaded car mile will range in the same states between 16 and 20 tons per loaded car mile. In the less than carload freight the efficiency of the car is not more than one-third of the average efficiency of all cars of traffic that the railroad moves. Ex. 53 Ward, shows the tons of revenue freight per loaded car mile on the Great Northern as 20.491 tons. Again, in a general way, state carload traffic, at least in its final distribution in local trains, moves over the road *in daylight only,* which entails a waste of time or a loss of use of the car which affects the movement and not the terminal loss to which I referred before.

"Ton Mile Basis" Takes no Account of the Fact That Certain Facilities are not used at all in the Trans-state Business.

The ton-mileage basis of dividing the cost of operation between state and interstate traffic would not

consider any of these inequalities. The ton-mile basis of division of expense would embrace, in the cost of moving, all traffic facilities that certain traffic does not require. Such traffic as does not originate or terminate within the state, and which may be termed trans-state traffic, uses only a portion of the facilities provided by the railway company for the conduct of its general freight business. If the ton-mile basis of dividing expenses were applied rigorously, then this trans-state traffic would be charged (improperly) with its proportion of the expenses of operating and maintaining the branch lines of the road over which trans-state traffic would (not) move, with the maintenance and operation of industry tracks, house tracks (where merchandise is loaded and unloaded), public team tracks (where consignees or shippers unload or load their commodities), storage tracks, freight houses, where local traffic is handled, stock pens and the tracks leading to them, and the station organization. This class of traffic would not use the facilities enumerated.

The "Ton Mile Basis" takes no account of different conditions.

The ton-mile basis of expense division as between state and interstate traffic would eliminate different conditions on different railways, and the physical differences on divisions of the same railway. This at once puts the ton-mile basis of dividing expenses out of the question with the management of a railway. The conditions on different railways are different in respect to cost of operation, and even different on different divisions of the same railway. And this is due to the reason that every division of a railway, regard-

less of the density of its traffic, be it large or small, must maintain an efficient organization, and this overhead organization is a part of the expense to be taken into account of the division when the ton-miles are used as a divisor of the expense. It will be very readily seen that two divisions might require the same fixed expense of operation, while the density of the one might be 100,000 ton-miles per mile of road per annum, and the other 200,000 ton-miles per mile of road per annum.

Again, there is a difference in the topography which would be represented in the grade and alignment, which would make a difference in the cost of operation on a ton-mileage basis, with the division that had lesser grades and fewer curves. And the ton-mile basis would exclude special labor cost incident to either local or through traffic. In addition to the extra labor cost in the handling of the less-than-carload traffic over carload traffic there is a difference in the cost of performing local and through service.

There is no difference in this respect in the roads running west of Chicago and the roads touching the west bank of the Mississippi river, for the reason that these matters are adjusted with the labor organizations, and the basis of train pay is generally the same—it is the same with the exception of some local adjustments.

The wages of trainmen employed on local freight trains is higher than on through freight trains, and, as a general rule, because of the character of the work done, more trainmen are employed on local than on through trains. (Pages 1183-1185.)

In a general way, the cost of operation is increased by the damage done in switching, and this would apply to nearly all the conditions I have named in the short haul, where a greater number of packages are handled to produce the same ton-miles, and from damages that occur to these packages while being handled in the train. (Page 1186.)

Ton Mile is useful for only limited comparisons of performance.

On account of all these reasons above given showing that the ton-mile basis of dividing expenses would not be a truthful factor to employ, the railway companies themselves have long since discarded that unit to determine their cost of operation generally.

The unit is used, however, by the railways to determine the efficiency of their operation in the way of quantity of performance. This is not alone a net ton-mile basis, but a gross ton-mile basis and railway managers (I have discussed this question frequently) do not measure the efficiency of the operation of one division with another on the ton-mile basis. It is used to compare the efficiency of operation of a division with itself, under similar conditions—that is, a winter month with a winter month, or a summer month with a summer month. It would not be used to compare the efficiency of operation of a division during cold weather with that of warm weather. And this is because of the known fact that no correct conclusion would be reached, because it is rare that two divisions of the road have precisely the same general conditions which must be necessary to make that comparison of value as showing cost of operation.

Of course, having the expenses and the ton-miles on a division, it is possible to continue the calculations so as to reach a result in cents or mills or dollars, but the ton miles drawn—accomplishment—is a part of those statistics that are of value to the man on the ground. (Page 1186.)

To my mind, the train miles, the car miles, and the ton miles must all be excluded from consideration in the search for a basis on which to divide the cost of the expenses of operation as between state and interstate traffic.

This leaves the results of operation to be considered, and that is the earnings. (Page 1187.)

Note.—The "Ton Mile Basis" here referred to is the "Straight Ton Mile Basis" as distinguished from the *"Equated Ton Mile Basis"* used by the Master in the light of this and other testimony.

Defendants contended below for the Straight Ton Mile Basis to divide Freight Expense between Intrastate and Interstate Business.

The "Revenue Basis."

The earnings as between state and interstate traffic can be ascertained, or at least measurably so; and from the fact that the rates must take into consideration, character, value, risk attached to transportation of particular articles, the basis seems to be an effort to consider the inequalities that the other units mentioned do not.

The traffic is classified between that which moves in carloads and less than carload lots, and articles of bulk and value are covered by different rates.

Mr. McPherson's Conclusions.

While the revenue basis or the earnings basis on the ton-mile consideration would not give accurate results, and would not take into consideration all of the inequalities between the various classes of traffic and between state and interstate traffic, it seems to my mind more equitable to use for that purpose, provided that the observable differences in the cost of handling the state and interstate traffic, which are more quantitatively (if I may use that expression) than mathematically expressed, are added thereto.

My view or my opinion, is that employing the revenue basis for the purpose, considering that the state traffic *costs, as a minimum, four times that of the interstate traffic,* the basis would be a proper basis; assuming, for example, that on the ton-mile basis the *earnings per ton mile* on state traffic were as *two to one* on interstate traffic considering the ratio of expense as *four to one would double that ratio, would double that basis of two, making it four to one.* (Page 1187.)

From the testimony of Mr. Ward and from this exhibit (Ex. 53—Ward), and from the known fact further that railway methods of operation differ very slightly on railways touching the west bank of the Mississippi river north of the cotton-producing states, my opinion (is) that the cost of operation of state traffic on the Great Northern road would be, for the reasons I have given, also in my analysis, which are common in their application to all railroads, *between four and seven times as much as the interstate business.* (Page 1188.)

I have read Mr. Elliott's testimony and I have also examined the exhibit, and for the reasons given in my general testimony I should say that there was very little difference between the cost of handling state and interstate traffic in the ratio of *between four and seven*, on both of those railways. *That is, the relation between state and interstate cost on both railroads is the same.* (Page 1188.)

Testimony of James N. Tittemore.

(References are to record in Minneapolis & St. Louis case.)

In the Minneapolis & St. Louis case it appears that that company owns 632.06 miles, 379.47 of which are in Minnesota, 212.26 of which are in Iowa, 40.33 of which are in South Dakota. These owned tracks extend (1) Minneapolis, Minn., to Angus, Iowa, 259.90 miles, 122.07 miles of which are in Minnesota, 137.83 miles of which are in Iowa; (2) Hopkins, Minn., to Watertown, S. D., 216.07 miles, 175.74 miles of which are in Minnesota, and 40.33 miles of which are in South Dakota; (3) Winthrop, Minn., to Storm Lake, Iowa, 153.50 miles, 80.21 miles of which are in Minnesota, 73.29 miles of which are in Iowa; (4) Manitou Junction, Minn., to Tonka Bay, Minn., 1.45 miles, all in Minnesota; (5) Kalo Junction, Iowa, to Kalo, Iowa, 1.40 miles, all in Iowa.

Its leased mileage aggregates 367.22 miles, 137.62 miles of which are in Iowa, and 229.60 are in South Dakota. These leased miles are as follows: (1) Ruthven to Des Moines, 137.62 miles, all in Iowa; (2) Watertown to Leola, S. D., 114.13 miles, all in South Dakota; (3) Conde to Le Beau, S. D., 115.47 miles, all in South Dakota.

It operates under trackage rights 29.21 miles, 10.11 miles of which are in Minnesota and 19.10 miles of which are in Iowa. The trackage rights lines are as follows: (1) Minneapolis to St. Paul, 10.11 miles, all in Minnesota; (2) Spencer to Ruthven, Iowa, 12.45 miles, all in Iowa; (3) Tara to Fort Dodge, Iowa, 6.07 miles, all in Iowa; (4) at Des Moines, .58 of a mile. (See Exhibit 3—Scott.)

The tons moved for the year ending April 30, 1908, aggregated 2,376,028, distributed between the states as follows: Minnesota, 1,748,259; Iowa, 757,605; South Dakota, 236,013. Compared with tons moved during the next preceding year Minnesota showed a decrease of 107,839, Iowa decrease 63,074, South Dakota increase 110,171. (The increase in South Dakota is to be explained by reason of new mileage added.)

Tons moved one mile for year ending April 30, 1908, total 247,067,521, distributed among the states as follows: Minnesota, 181,576,276; Iowa, 46,188,017; South Dakota, 19,303,228. As compared with the next preceding year there was a slight increase of ton miles in Minnesota and in Iowa, and a very large increase in South Dakota the ton miles in South Dakota for the year ending April 30, 1907, being only 6,021,472 (which increase in South Dakota was because new mileage had been added.)

The average haul .n Minnesota is 103.8 miles; the average haul in Iowa, 60.8 miles; the average haul in South Dakota, about 80 miles.

Revenue for movement of freight only, year ending April 30, 1908, total $2,694,632.54, distributed among the states as follows: Minnesota, $1,629,834.27; Iowa,

$751,527.44; South Dakota, $313,270.83. In Minnesota there was a decrease of more than $46,000, in Iowa a decrease of more than $47,000, and in South Dakota an increase of more than $213,000 (because in South Dakota new mileage had been added.)

Revenue from movement of freight in Minnesota, about $4,183 per mile of track; in Iowa, $2,036; in South Dakota, about $1,160. (See Exhibit 10 Scott.)

Mr. Tittemore, in his testimony concerning basis of rates, elements of a reasonable rate, and cost of doing any particular item or class of business, testified in substance as follows:

Take a carload of flour shipped from Fairfax to Chicago; if hauled via Minneapolis to Albert Lea on the line of the Minneapolis & St. Louis Railway and there turned over to a connecting carrier, the distance hauled will be 198 miles. It may move on train No. 67 to Hopkins and train No. 94 to Albert Lea. If it is the only car moving the revenue yielded will be $37. (Pages 780, 781.)

If the same carload with 26 other carloads of wheat or flour from mills at or about Fairfax be handled on the same train, the revenue would be $962. The latter may be compensatory, the former we know self-evidently is not. (Page 781.)

To illustrate the reasons why the cost of transportation of a single carload of freight, a single commodity or class of freight, cannot be stated with accuracy or as a matter of accounting, Mr. Tittemore used the instance mentioned in substance as follows:

We start a train from Fairfax, train No. 67, one carload of freight, with 25 other cars. The company cannot determine, for instance, the amount of oil that

would be used on the locomotives—the amount of coal that would be used on the locomotives—that would be chargeable to the one car from Fairfax or to the 25 cars from Fairfax or from Hopkins to Albert Lea. It is just as essential to have the 25 cars in proper shape to get one car to destination as it is to have the one car in shape to get the other 25 cars to destination, because the safety of the train depends upon it. Assume that during the week that the train referred to moved from Fairfax to Albert Lea a frog in the switch at Gibbon, an intermediate point, is changed at a cost of $26; what proportion of that sum should be charged against the one car earning $37 from Fairfax?

Suppose that at another station there is a wreck; the car itself is not injured in any way, but there is damage to the other 25 cars in the train, amounting to $650; what proportion of that sum should be charged against the one car which was not injured? Suppose that the wrecking-crew is required to come; what proportion of that expense is to be charged to the car in question? What proportion of the coal on the engine that carries the wrecker? What proportion of the enginemen's pay? (Pages 781, 782, Vol. 3 M. & St. L.)

Difficulties in the Ascertainment of Cost of Any Particular Traffic.

The train requires telegraphic attention, dispatchers must be on duty, and orders given to get the train over the road: What proportion of that expense should be charged to the car mentioned? (Page 782.)

There are so many elements that enter into the compensatoriness of a rate, and they are so intangible, so hard to get at, that to me it is the most difficult proposi-

tion to contend with in the railroad business. (Page 782.)

We repaired locomotives last year, or last March, in order to be able to haul the wheat out of Minnesota and the Dakotas at this time. We didn't need the engines then, or in June, or July, or in August. The repairs made in March must be chargeable to the traffic that moves in October, say, and November, and December, and possibly next March. How can you tell how much of that expense should be charged against each individual item of traffic or to each car of traffic? (Page 782.)

Mr. Tittemore further said:

That the density of traffic is a primary element in determining rates, and that the denser the traffic the easier it is to handle it and the more valuable it is to the carrier, and that, other things being equal, the company having the denser traffic would make the higher profit, whatever the rate, as compared to the railroad having the thinner traffic. (Page 783.)

The freight train receipts on the line of the Minneapolis & St. Louis for the year ending June 30, 1908, were about $2,500 per mile of road. This is very thin traffic. (Pages 783, 784.)

The average tonnage per car, the average tonnage per train, the average mileage per car, the average mileage per train are primary elements that enter into the question of cost. (Page 784.)

The trains carrying the lower classes of freight usually carry the heavier tonnage, and those carrying the higher classes of freight the lighter tonnage. (Page 784.)

The through or long-haul business on the line of

this company moves faster, measured by car mileage per day or train mileage per day, than the local business. There is a considerable difference, varying with conditions. (Page 785.)

The direction of traffic is an element that must be taken into account in determining the cost of traffic. That is, the direction of the load as compared with the general direction of the empty movement. The conditions on this line are bad. The ideal condition is to be able to equalize empty car haulage with through haulage. The ideal condition never works out, and on this line it doesn't work out at all.

The wheat, for instance, moves in from two to four months. Last year and the year before it took longer to move it than it is going to take this year. The farmers this year have thrown the wheat on us so that we can't keep cars there fast enough to get it out of the elevators, and we are going to move it probably in sixty days. Now we are hauling train-loads of empties out to relieve the elevators, whereas, under ideal conditions we would expect to set those cars into our freight-house, put in merchandise or other freight, and gradually take them out there.

In other words, out of the wheat crop that we could handle in that way in four months we would make very much more profit than we would if we had to handle it in sixty days and haul empty cars out there by the train-load. (Pages 785, 786.)

Much More Expensive to Do Local Than Through Business.

It is very much more expensive gathering up business from local terminals and hauling it to (larger) terminals than transporting the same commodities be-

tween large terminals, as, for instance, between the Twin Cities and Chicago.

It takes twice as long to haul a train—a train to do local business—from Minneapolis to Albert Lea as it would to haul a train from Minneapolis to Albert Lea when the train was for Chicago. We have a through train schedule and we may not always do a through train business with it. We may be compelled to do a little local business switching. I don't want to be understood to say that we have through trains that go right straight through to Albert Lea with freight for Chicago or south of there that do nothing north of there; we have Chicago through trains, but they do occasionally set out a car at some local point.

The record on our road is that our local freight-trains require about twice the time to get freight over the road as do our through freight-trains, and I think that is true even when we let our through trains do some local work. (Pages 786, 787.)

Elements of Extra Cost.

All of the elements mentioned—density of traffic, tonnage per car and train, mileage per car and train, the kind and volume of the traffic, the distance of the haul—enter into the making of an intrastate rate. (Page 787.)

There is another element, the one principal element, that it costs more to handle local business than it does through business. The length of the haul with intrastate business would be shorter, and the cars would be more apt to be, and are on our road, loaded lighter than the general traffic, that is, the through traffic. (Page 787.)

The Minneapolis & St. Louis road in itself is a road that you would call a distinctly local road. I consider that there is one division that really handles through business, and that is from St. Louis to Albert Lea. The road from Minneapolis west to the Missouri River has some through business, but not through traffic as a trafficman or railroad man understands it. A shipment from Le Beau to South St. Paul would be through shipment on our road so far as intermediate divisions are concerned, but it is local traffic to the road. There is no through traffic from any other line coming on to our railroad between Minneapolis and Le Beau in any quantities whatever that would be worth calling through business. (Page 969.)

On our road intrastate traffic would not be through traffic. We have a considerable amount of wheat business west of Watertown, and it will assemble by trainloads at Conde or at Watertown and will be hauled to Minneapolis in through trains. This is not a schedule train, but a through train carrying freight from remote points on the road to Minneapolis, but that is confined to four months in the year. After that is moved we have no traffic whatever on the line from Minneapolis to Le Beau that can be called through traffic, and all our trains are run with relation to the local business on the division. (Page 970.)

When I came with the road we had on some of the divisions west here (I think it was the Pacific) a service of a freight-train once a day and back east the next day. I recommended that a local service be put on every day each way, except Sunday, because the local business should be first considered and should

be taken care of by the company. These trains that I ordered put on might just as well have done twice what they did do and could have taken care of this business from west of Watertown without any great additional expense. That condition is peculiar to our road, and I presume more so than any other road in the country. I don't know of any road exactly like it in this section of the country. (Pages 970, 971.)

On the Albert Lea division there is a local train each way every day, except Sunday, to take care of the local business, and there are two trains that take care of the through business. When I speak of through business I mean business that goes to foreign lines at Albert Lea, to the Illinois Central or the Iowa Central. I don't consider it through business to Des Moines on our line, although it is two hundred miles beyond and although it may be through business to that division. (Page 971.)

Our trains on the Albert Lea division are primarily run to handle business from connecting roads, to and from connections there, the Illinois Central and the Iowa Central—and formerly, for a great many years, the Rock Island road before it built into Minneapolis.

We found that through business coming from those roads meant not business from Cedar Rapids nor Des Moines, but from Chicago and from New York. For instance, we have a car of through business that is assembled by the Lackawanna road at New York. The merchandise is put into the car and sealed there. It comes through on a fast train to Chicago and is there delivered to the Illinois Central, and the employes of the Illinois Central and the Lackawanna, or its repre-

sentatives at Chicago, watch that car as closely as you would watch a sleeping-car full of people going to some place in the Northwest. It is turned over to the Illinois Central and comes to us at Albert Lea, and that is through traffic; and we have our schedule for through traffic fixed with relation to that. It is not one car from New York, but we have several cars. We have several merchandise cars from Chicago both via the Illinois Central and out via the Iowa Central, and from Peoria via the Iowa Central, all assembled at Albert Lea for our through train to Minneapolis, and we aim to haul that stuff from Albert Lea to Minneapolis without any intermediate stops. That is through traffic as I define it. I have studied that through and local traffic question quite a considerable. I have examined the train sheets myself, and I find this, and I believe this to be a conservative statement of the facts: it costs the Minneapolis & St. Louis 70 per cent more to handle a local train—strictly local train—between Minneapolis and Albert Lea than it does a through train.

For a considerable period of time it took the local trains 13½ hours to travel between Minneapolis and Albert Lea, as against 6 hours and 50 minutes for the though trains between Minneapolis and Albert Lea.

The average number of stops between Minneapolis and Albert Lea was 14 for the local trains and 5 for the through trains.

I testified heretofore that we did do a little local business on through trains, but I have since found out that our transportation department have avoided that in every case but one, and that the stops by the through trains were to pull fire, to take water, or for some railroad crossing, or for some other reason that they

couldn't help as in an emergency that they had to meet.

It takes one hundred per cent more coal to run our local train than it does our through trains.

The water expense is nearly one hundred per cent more, if you divide it upon the basis of trains.

The pay is considerably more. I found that we had actually paid for labor for running *local trains* from Minneapolis to Albert Lea *$29.64* against *$16.42* for a *through train* on the same day. We pay the men on the local trains more money per hour or per mile than we do on the through trains, and besides, there is an extra brakeman on the local train.

The switching at the stations can hardly be expressed in percentage, it is so much more (by local trains than through trains). *The wear and tear is not only much greater to the track and switches, but particularly to the engine itself.* (Pages 971, 972, 973.)

The cost of hauling through trains would be, let us say, $100, and the cost of hauling local trains would be $170. I would say that is about the fact. The through train hauls many times as much freight. *"I don't believe but what it hauls ten times as much—not twice as much."*

"I believe that the through train would earn ten times as much as the local train that cost $70 more to run than the through train did. That is, that the through train cost $100 and your local train costs $170, the through train of flour or wheat will pay ten times as much to the company as the local train." (Page 975.)

The tonnage of the local train is less (than the tonnage of the through train) and the tonnage of the local car is less than that of the through car. It is

not the same nature of traffic at all. The train travel is less. The demand for fuel and train supplies is greater on the local train. The wages are higher. More time is consumed. (Pages 976, 977.)

The tonnage on the trains on other divisions was much less than one-half the tonnage on the trains on the Albert Lea division taken as a whole. That is, take all the trains on those divisions, and all the trains on the Albert Lea division, the tonnage (per train) would be twice as much on the Albert Lea division as on those divisions. (Page 977.)

On the Watertown division or the Storm Lake division we have no regular (through) freight-trains. The wheat trains I have referred to are special or extra trains. The regular daily local trains, as a general rule, move all the business, through and local. (Page 977.)

The special trains which haul wheat from Dakota would haul no Minnesota business. (Pages 978, 979.)

On the east-and-west line in Minnesota it may be true that for a short period of time special trains were made up at Morton or at Winthrop, where we bring freight up from our Southwestern division. We might find freight enough there so that it would burden our local trains, and we would put on a special engine and haul it through. If that freight all originated in Minnesota and was taken to Minneapolis as its final destination, the movement would be intrastate. (Page 979.)

The west-going business is thin and we are obliged to handle a great many empty cars on our west-bound trains. (Page 980.)

The line that runs southerly, finally reaching Esterville and Storm Lake, Southwestern division, I don't think would support one good train a week, but we do run seven trains each way each week. The business is not separated between what is strictly local and what is strictly through. On the Southwestern division I think one good engine could haul all the business for a week in a train each way, but because of local business we must run a local train or a peddling train every day. (Pages 980, 981.)

As far as the roadbed and track and station facilities are concerned on this line in Minnesota it would be able to do several times as much business as it does do. (Page 981.)

Branch Line Cost is no criterion by which to determine intrastate cost.

Mr. Tittemore, in his testimony appearing at *page 1048, Vol. 3 M. & St. L.* and following pages, stated some of the reasons why the cost per ton mile, or upon the basis of any other unit of service, *on a branch line could not be taken as a criterion of determining the cost of intrastate business upon that branch or upon the other parts of the system.*

The character of the traffic may not be, and usually is not, the same upon one branch as upon another. For example, on the Southwestern division (the poorest division of the Minneapolis & St. Louis system) the item of traffic that differentiates that branch from other parts of the road is *cement* moving from Fort Dodge northerly, *a low class of business moving upon low rates.*

Under the Western Classification, as appears by Ex-

hibit 21, there are 22 different rates or subdivisions of the classified freight. Shipments varying in tonnage move on each of the 22 rates varying distances.

Note.—It is also undoubtedly true that shipments defined in each of the seven classes prescribed by Chapter 232 move in varying tonnage varying distances on that and each of the other divisions and parts of the system.

It probably will not be denied that there are special rates or "commodity rates" under which shipments of various kinds of freight move in varying quantities and over varying distances on that and each other division and part of the system.

Freight moved at the lowest rates may yield the greatest profits to the carrier, and freights moved at the highest rates may result in a loss to the carrier. The character and volume of the business constantly change.

The suggestion that the average cost per ton per mile on one road or any part of a road may be taken as a measure of or guide to the cost per ton per mile upon another road, or upon other parts of the same road of intrastate business, is wholly without foundation.

Testimony of James J. Hill.

(References are to record in Great Northern case.)

Referring to Exhibit 53 Ward, Mr. Hill stated that the average haul of intrastate business *113 miles,* would be, roughly speaking, the distance from St. Paul to Melrose, and that the average of interstate business touching Minnesota, *557 miles,* would reach from St. Paul nearly across North Dakota, almost to the western limit.

Length of Haul.

That the length of haul affects the cost per unit of transportation or per ton per mile. That on the long-haul business the principal element of cost is to keep the car or train moving.

The terminal expenses, the labor of receiving and loading, stowing, and the risk of damage, the use of the terminals, clerical hire, way-billing, abstracting, receiving and so on, are the same on the same sort of traffic or the same commodity, whether it travels a thousand miles, two thousand miles, or twenty miles.

Use of Equipment.

There is a greater use of equipment (in the long-haul business), it travels more miles in a day.

There are some questions in regard to long and short-haul business that are difficult because of the change that occurs in the movement of traffic. The average would bear very little resemblance to the facts as they occur. In Minnesota, on branch lines, for *six*

or *eight* weeks during the season when grain moves, there would be a considerable business, from a *half* to *three-quarters* of the *capacity* of the *train;* you might occasionally get a train to its full capacity, but I don't think they would run over a half to three-quarters. That would apply for six or eight weeks. Then you would find a train that had a capacity of forty cars moving with twenty or thirty cars, and occasionally might go up to thirty-five or even forty, but not often. The rest of the time there might be from five to fifteen cars, and fifteen would not occur very often. Sometimes, when the business is so very light, we try to accommodate it by running tri-weekly, but in that case the wages have to be paid to the men whether they are working or not, and the agents and stations and all that expense has to be incurred. The saving is the saving in the cost of moving the traffic, and that might look to be small, but railroad earnings are made up of small things.

Dividends—Economies.

The entire dividend of the Great Northern Railway would amount to less than three copper cents for moving a ton of freight ten miles. The dividend is all the owners of the property get out of it. We have to study every item of economy. Take from Willmar to Sioux Falls or from Willmar to Sioux City—that is a well-settled portion of the state, as far as it is within the state—and a most excellent country in Iowa. That line would not pay if dependent on its local business. If it were not for the exchanges and the business at Sioux City, the line would not pay much above operating expenses. It would be a poor investment. (Pages 1305-1306, Vol. 3 G. N.)

Train Loading—Terminal Service.

To illustrate that the terminal expense applies regardless of the length of haul, take a freight train starting at St. Vincent in the busy season when grain is moving to go to Crookston, or Redlands, which is just south of Red Lake river. That train might get its load in the first twenty-five miles, it might get it in the first sixty miles, but if it did some other train would have to haul the load from the last forty or fifty miles or seventy-five miles, so that a train picking up a load only gets its full load, taking the average, for half the distance. The capacity of the train might be 1,500 tons, but it would not get the 1,500 tons for more than half the distance, and so it would average 750 tons, and its pay would be limited to the number of tons it carried. And from Crookston or Redlands, if that train was going to Cass Lake and came in solid, the engine that took it on from Redlands over to Cass Lake on its way to the head of Lake Superior would get the solid 1,500 tons, and the engine that hauled it from Cass Lake to Superior would get the 1,500 tons, but when it got to Superior that division would be charged with the terminal service.

This question of terminal service is not often understood. I think, as a rule, that we have in the Twin Cities more locomotive switching cars, more locomotives in switching service, than we have in hauling freight into and out of the Twin Cities. Sometimes the difference is considerable. I think the last time I looked it up we had *twenty-six freight engines hauling* traffic into and out of the Twin Cities, *and we had thirty-five switch engines.* Terminal service is a very large item. (Pages 1307, 1308.)

Use of Cars for Short Haul Business.

There is some short-haul business where you can find cases that the railroad would be much better off not to have it at all. Take, for instance, up here at Coon Creek there is a brick-yard. A carload of brick comes to Minneapolis or St. Paul. It would take one or two days for the car to be loaded, it would take a day to bring it down. It would be very seldom that it would be loaded in one day. Really it would take a day to get it there, a day to load it, and a day to bring it down, and then (if it didn't rain) it would be unloaded in two days, because it has got to be set in a convenient place, on a team-track, and they wouldn't average quicker than two days. That would be five days. That car would pay $10, it would pay $2 a day, but the ground rent upon which the car stood in the yard would take a dollar and a half for the two days, at least that, and when I say ground rent I mean the interest on the money invested in that piece of property. So that you get about $1.70 a day for the use of the car. That car is hauled and moved and after paying your trainmen and everybody else, yardmen, switch-engines, waybilling, reporting, everything else, you get about half as much as a man would get for driving a team or for a team's work. Your car costs twice as much as a team, and your hauling the stuff and all these additional men, taking the relation that it bears to other things, for that kind of work the road would be better off without it. (Page 1308.)

Spasmodic Movement of Traffic.

In the winter time we have one train, sometimes a passenger train, sometimes a freight train. We have a train in the evening passing over the road. The road must be kept open. We may have to run a big rotary plow with two engines to open the road. So that the cost of moving a unit of traffic, say a ton would be enormously out of proportion, a great deal more than it would be if you were moving five or six trains over the road. As a rule, the business is moved when people want it to go. We don't control the time when they will ship it. (Pages 1308, 1309.)

The grain will move in the fall after the harvest and before the close of navigation. We have to haul empty cars up on those thin lines. A large proportion of all the cars moved are empty. When the lakes freeze, when winter comes, that same frost that froze the lake has made it rather cold out on the prairie, and the man wants coal. We have to take it to him. We have been for a couple of months hauling empty cars out to him that could have taken the coal, but we can't compel him to take it or buy it, and the rule is that very largely we have to move the coal out and then haul the empties back. After he has laid in a stock of winter coal there is very little traffic of any kind. We would have a capacity of thirty-five or forty cars per train, but probably there are three cars, and there might be seven or eight to haul. I haven't any average, but I think it wouldn't average on those branches over six cars. The tonnage contained in these cars would have to bear the cost, and it would be practically the same as levying a frontage tax, the greater number of feet you had to distribute over a given number of dollars or amount,

the smaller the proportion would be for each foot, and the greater number of tons you could distribute cars over, the smaller the charge would be against each ton. (Page 1309.)

Terminal Expenses Increasing.

It is axiomatic that, considering the true terminal expense, the greater number of miles you have to distribute the terminal cost over, the less per mile the cost of the terminal expense. (Page 1309.)

The terminal expense is a much greater proportion than is generally supposed, and it is constantly increasing. Years ago Mr. Roberts, the president of the Pennsylvania road, showed me figures indicating that the cost of loading a car at their station in Philadelphia and switching it into the train, was greater than the average receipts by the Pennsylvania road for hauling a car one hundred miles. Of course, that class of business loaded at stations is usually a higher class and pays a higher rate, but I think that, counting one car against another, a carload of coal or a carload of heavy traffic, where you get the full capacity of the car, comes nearer a fair compensatory rate than the traffic that is carried on estimated carload. (Page 1310.)

Difference in Cost on Main Compared with Branch Lines.

The business going to the west and northwest is sent over the Breckenridge line, because grades have been reduced to four-tenths of one per cent. Between the Twin Cities and the head of the lakes the traffic is between heavy traffic centres. The tonnage is heavy,

and the tonnage across from the head of the lakes to Crookston and so on, is heavy, at times and it used to be that the heaviest, or about the heaviest, traffic on the east end went by way of St. Cloud and Fergus Falls. That business is now light, because mostly sent over the Breckenridge division, for the reason given, that an engine will haul a heavier train. (Page 1311.)

Taking the branch line service into consideration particularly, there is a lesser efficiency, both in the equipment and the results obtained from engine and car efficiency, than is procured on the main line service. That is an important element in considering the extra cost in the State. In the main line business, where the traffic is heavy, the certain fixed charges are distributed over a greater number of tons. If we run two trains a day between here and Breckenridge, or six trains a day, there would be no difference in the number of station agents or their wages. Ties would not rot any faster and banks would not wash any faster by the action of the weather. The heavier the traffic, the lower the cost can be made. That is the well-established rule. (Pages 1311, 1312.)

Mr. Hill's Conclusions.

It is very difficult to say how many times more on the average the cost of the short-haul business in the State would be than the cost of the long-haul business, as shown by these figures (on Exhibit 53 Ward) and general knowledge and study of the conditions of the Great Northern in this State, because the conditions vary so much in the volume of the traffic moved at different times in the year and the local conditions, weather and so on. If you have got to open a branch

line with a snow-plow and two engines, the cost is greatly increased in the winter over what it would be in the summer when a single engine ran along There are times when the cost would be five or six times as much, and it might be on a particular train, or for two or three days or a week or more; it might be eight or ten times. There might be times for six or eight weeks where it wasn't to exceed twice as great. Now, to get at the average, it would practically require a thermometer record and so many things that it would be difficult to make it, but speaking from judgment, I would say that *from three to four times would be very low.* Some people would say it is more, and it is very difficult to get at it, and what might hold good one year or one month would not hold good the next. If business decreases, and you can't get below the minimum service, you have got, as a rule, to give a train a day. Sometimes, where we run a passenger train a day, we will run the freight train, during the winter months, three times a week, and then we can't load that train to over one-fifth or one-sixth of its capacity, but we have to pay the wages of the men and the station agents and the section labor. The road has got to be patrolled whether there are five trains a day run over it or one train a day. (Pages 1312, 1313.)

Before I leave that question I want to be understood that my best judgment is that three or four times is conservative. I think it would cost more than that; but those figures are based on as close a study as I could give the question in the past. Now, if our tonnage is to fall off, if the production of tonnage in the country is to fall off, that proportion of *three or four*

to one will increase in proportion as the tonnage falls off, because, as we can't reduce the service below the minimum, and if that train could move forty cars a day, and move them the full length, it would be vastly different than if they are moving three or four or five cars a day or ten cars a day. Very often people have something that is perishable, and they want it shipped; we have got to take it whether they load the car or whether there is a wagon-load in the car—it has got to go to market. We have got to run refrigerator cars to carry butter and eggs and that sort of stuff sometimes when there isn't a quarter of a carload on the branch—we have got to furnish the facilities, and while we might have eight or ten cars, those cars in all probability wouldn't have over a third or half a load.

So a close investigation of that question is attended with so many varying conditions that it is hard to establish the actual cost, and I would be inclined to repeat just what I have said, *that three or four times would certainly be within the mark under all circumstances.* (Page 1313.)

Note.—By this answer Mr. Hill referred to *all items* of cost *not* alone to train movement items, see p. 1353, Vol. 3, G. N.

Intrastate Passenger Business.

Testimony of Howard Elliott.

(References are to record in Northern Pacific case.)

Exhibit 80 Elliott indicates passenger earnings local to state, $1,015,150.34; passenger earnings interstate touching Minnesota, $1,940,718.17; passengers carried intrastate, 1,481,282; passengers carried interstate, 682,065; average haul of passengers *within the state*, intrastate, 35.3 miles, interstate, 148.0 miles. The total haul in all states of passengers touching Minnesota has not been computed.

Mr. Elliott testified in substance as follows:

I think it costs more per unit of service to do the short-haul or state passenger business, than it does to do the interstate or the long-haul passenger business. Many of the same general statements as to the methods of doing the freight business apply to the passenger situation, although not to so great a degree. The fact that your haul is 35 miles for local and 148 miles for interstate in Minnesota shows that you have to provide facilities for loading and unloading the passenger much more frequently on the local than you do on the through. Of course, the passenger loads and unloads himself and is supposed to take care of himself in so doing, but there is a risk every time a passenger gets on and off a train and every so often there is a casualty and a consequent payment which must be borne by the business. The baggage of a passenger, however, is not loaded and unloaded by himself but is loaded and unloaded by the company, and the increase in the movement of baggage is something that is assuming quite

serious aspects in railway management. The whole system of American passenger rates is illogical in that we take a man and charge him, letting him have 150 pounds free. That system, however, is grafted on to our method of doing business and probably cannot be changed at the present time. (Page 3145.)

The company has to provide facilities for the local passenger to get on and off the train at much more frequent intervals than is the case with interstate passenger who travels four times as far before he gets off the train. The handling of the passenger's baggage requires labor, and that has to be done much more frequently for the short-haul man than for the through and long-haul passenger. The question of handling baggage is assuming quite large proportions on the railroads as population increases, and it is quite a serious burden in the stowing away of baggage satisfactorily in the baggage-car, in station labor for handling it, and in station facilities for caring for it. (Page 3146.)

The local stations have to be warmed and lighted and kept in good order, and, as the country grows and the general plane of living gradually improves, more money must be spent by the railroad in providing these local terminal facilities which in the main are used for the shorter-haul business and are provided in response to the local demands of the community to be served. (Pages 3146, 3147.)

In Minnesota, the Northern Pacific, in response to that sentiment and demand, is, in common with other companies, making investments for improved local facilities that mean, first, a greater interest on the investment, second, a greater depreciation charge be-

cause of the greater investment, third, a greater expense of maintenance because of the character of the structure, and these items of expense are, in my judgment, for the benefit much more of the local intrastate passenger than for the through. For example, this company is just building a new station at St. Cloud, just finishing one at Detroit, and is building a new one at Staples. I do not claim that there are not through and interstate passengers who will use these facilities, but I do claim that, in the main, they are for the benefit of the purely state business, and that the terminal charge for the passenger who enters the station and buys his local ticket and checks his baggage, or who gets off the local train and passes through the local station to his home—I do claim that the charge per passenger for such facilities locally is very much more than the charge incurred by the through passenger when you consider the haul of 35 miles as against 148 (average haul in Minnesota of interstate touching Minnesota.) (Page 3147.)

The local passenger train handles a much less volume of business than the through passenger train. As in the case of the freight train, it handles some through interstate business in most cases, but I think this is not a large item in the purely local trains. Many of our local passenger trains have been earning from forty cents up to perhaps a dollar a train mile and sometimes as low as twenty-five cents or even eighteen cents a train mile, indicating that the use made of the train is very slight by the traveling public. The fact that the train earns such a small amount indicates that each car earns a relatively smaller amount and much less

than the earnings of a car placed in the long-haul through business. (Pages 3147, 3148.)

The so-called short-haul local passenger train has to make a great many stops and has considerable station work to do. The constant stopping of these trains is in itself an element of expense, because each time a train stops there is some cost, there is some risk of accident, and there is some loss of fuel in stopping and then having to start again. The fact that passengers are getting on and off at more frequent intervals in the short-haul local train increases the risk of casualties, because people with the best of care will be careless and stumble and accidents will occur, and every time a train receives and discharges passengers that element is there, and every so often it is converted into actual money by some accident more or less serious which results in a claim which must be settled. (Page 3148.)

The local passenger trains, as in the case of the freight trains, generally move by daylight and the equipment has to be reserved for use the next day and cannot be sent elsewhere and put into service. Where there is any unusual demand for service on the local trains, such as a special meeting at some small point, extra equipment often has to be brought a considerable distance to serve that demand rather than to keep it on the branch idle waiting for the occasional necessity for increased space. (Page 3148.)

Every passenger train running locally on a main line where there is an important volume of business moving is more or less of an obstruction to the movement of such business, and that creates an expense to all the trains that may be running upon that part of

the railroad. That expense probably cannot be given in dollars and cents, but those who are familiar with train movement know that the meeting and passing of trains at frequent intervals cause expense and cause delay to business other than that on the train in question. (Page 3148.)

Mr. Elliott's conclusion is that it costs 25 to 50 per cent more to produce an intrastate passenger mile than an interstate passenger mile on the Northern Pacific in Minnesota.

The increased burden upon the railway company for supplying adequate, safe and reasonably frequent local service for light passenger business is not, in my judgment, so marked as is the case in the freight service, but I believe that the burden upon the company to provide such service and to meet the constantly increasing demands upon the railroad—to which it desires to respond if it can—(demands from communities and demands from various lawfully constituted bodies)—that the burden upon the railroad to meet these demands means that this local passenger train service will cost from 25 to 50 per cent more per passenger per mile. I think in most cases it is probably true that the so-called local train has some interstate or through business in it and a through train some local business in it. There are some cases where I doubt if there are ever any through passengers handled. Such a case is the one between Duluth and Fond du Lac, where the company maintains a passenger train service, and sometimes we have one passenger in the train, at other times it will run up as high as ten or twelve; but

it is fair to assume that with the great interchange of business in the United States there is probably somebody on nearly every train that has either come from some point outside of the state to a point inside, or may be going from a point in the state to a point outside; but in my own mind, and my observation is that, these so-called local trains are run purely for the purpose of handling the local business and of relieving the heavier through trains of the necessity of stopping, that in the main those trains are used by people that get on and off in Minnesota. (Page 3149.)

At certain seasons of the year on the lighter local trains there is a spasmodic demand that will come on Fridays and Saturdays and then the rest of the week the business will be very light. I think it is true without any doubt that to the passenger mile there is on the average greater car capacity required in the trains for the local than for the through, and I think that is also true with respect to the terminal service. I think that we have at a local station much more capacity for housing and affording facilities for the reception and discharge of passengers, much more capacity, than is needed except now and then. Occasionally the local station will have a big crowd, there will be a wedding and a great many people will go down to board the train or to see the bride and groom depart, but in the main we have to maintain a service and a facility that is not thoroughly well used, and that is evidenced by the low train-mile earnings on most of the local passenger trains. I think in the matter of the expense of handling baggage, it is more per passenger mile in the local or short-haul business than in the interstate business. (Page 3150.)

The commercial traveler has just as much baggage on the local short-haul trip as on the long-haul trip. The pleasure-seeker making a short-haul trip probably does not have so much as the pleasure-seeker making the long-haul trip, but I believe the difference in the quantity of baggage per passenger is more than offset by the fact that the baggage has to be handled a great many more times in the local business for a haul of 35 miles than in the through business haul of 148 miles (average haul in Minnesota of interstate touching Minnesota.) (Page 3151.)

In a through train from the Twin Cities to Puget Sound, the passenger car will make the 1,900 miles (in round figures) in seventy-two hours or about twenty-five miles an hour, and there is only a short layover at that end and it starts right back. The local passenger train that makes a hundred miles a day on its local car (and by a day I mean twenty-four hours) is doing probably the average, so that in seventy-two hours it would make three hundred miles as against the haul of the car to the Coast. The equipment on the Coast trains, for example, is used day and night. The branch trains and trains doing local business sometimes move partly at night, but in the main the company tries to adjust its local service so that people can travel between the small towns by daylight rather than at night. (Page 3151.)

Testimony of Frank E. Ward.

(References are to record in Great Northern case.)

Exhibit 53—Ward shows passenger gross earnings local to the State, $1,750,522.02; passenger earnings interstate touching Minnesota, $1,890,105.43; passen-

gers carried intrastate, 2,498,986; passengers carried interstate 690,026; average haul of passengers *within the state*, intrastate, 36.8 miles; interstate, 133.8 miles.

The average total haul in all States of passengers touching Minnesota has not been computed.

Mr. Ward's conclusion is that it costs not less than 50 per cent more to produce an intrastate passenger mile than an interstate passenger mile on the Great Northern in Minnesota.

Mr. Ward said in substance following:

In my opinion the local state passenger business is carried on at a greater expense per passenger per mile than is the long-haul interstate business. The difference between the two is not so great as it is in the freight business, but it (the local) is greater for several reasons; one is that a considerably larger amount of equipment is needed in the handling of the local trains; that is, the equipment is less continuously in service. The local trains run very largely in the day time only. They do not run on Sunday. The through trains run continuously night and day, and the cars in them are loaded with passengers both night and day and on Sundays, and are earning money all the time. And in addition to that there is the clerical service needed in the sale of local tickets at all of the local stations, which is required very much more for the local than for the interstate business, and the services of ticket agents and others handling tickets are more properly measured by the number of tickets they sell than by length of the passage covered by the ticket; it is practically as easy to sell a ticket for a thousand

miles as for ten miles and the relation between the two is very adverse to the local business. The cost is greater per unit in my opinion, and I should say that it would be not less than *fifty per cent* greater per passenger per mile in the case of the state over the interstate business. (Pages 1095, 1096.)

There is one other thing I might say in that connection, and that is that where local passenger trains are handled over heavy main lines, the indirect expense attached to delays to freight trains is something that is not easily measured, but is very considerable in quantity and has a bearing on my opinion as to the added expense of handling the state passengers. That indirect expense comes from delay to other trains in transit. The passenger train being a first-class train has the right of track over all freight trains, and the expense of stopping heavy freight trains, sidetracking them, paying overtime in many cases, and the wear and tear on equipment and tracks constitutes an indirect expense of considerable magnitude. (Page 1096.)

Testimony of William B. Doddridge.

(References are to record in Great Northern case.)

Mr. Doddridge said that the average extra cost of the Minnesota intrastate passenger mile is conservatively 25 per cent.

Mr. Doddridge said in substance following:

There are elements of extra cost for intrastate passenger business over interstate passenger business on the line of the Great Northern in Minnesota. The elements underlying the extra cost in handling the freight busi-

ness to a certain degree obtain in the handling of passenger business. That is to say, the expense increases as the length of the haul decreases. But in the passenger business it is not so great as it is in the freight, as the arrangements of detail of handling the passengers are quite different from that of the freight.

The figures for the passenger traffic on the Great Northern show that the average haul of the local traffic is less than one-third that of the interstate, even within the State itself. The figures do not show the total average haul of the interstate without the state, which must be very much larger. The state passenger business has a much greater use of terminals, equipment and other facilities in proportion to the passenger miles produced. The increased number of passengers taking and leaving trains in the short trips exposes them to a proportionately greater risk of accident; the cars are not so well loaded upon the average. A railroad company in Minnesota handles about three state passengers to produce the same amount of revenue that is produced by one interstate passenger. The intrastate passenger has the service of two terminals. The handling of baggage, the sale of tickets, and the services usually rendered by the company to the passenger at the departing and arriving station, are expenses all embraced in the two terminals. The supplying of waiting-rooms, heat and light, the sale of tickets, the handling of baggage, make the terminal passenger expense very much greater than in the interstate passenger. *In my judgment the average extra cost per passenger mile would be conservatively, twenty-five per cent over the interstate.* (Pages 1152, 1153.)

Testimony of Chester J. McPherson.

(References are to the record in the Great Northern case.)

Mr. McPherson said that it costs at least 50 per cent more to produce an intrastate passenger mile than an interstate passenger mile on the Great Northern in Minnesota.

The long and short-haul expense in the way of the use of terminals, as explained in my examination as applying to freight, would apply also to the passenger service. This would extend to the sale of tickets and the accounting features or the auditing features of the work, as well as the clerical station expense. If the average interstate haul is four times that of the state haul, then there would be the ratio of expense attaching to the state service of four to one, wherever more than one employe were required to do the entire station work. The terminal cost of that service would also apply in the way of handling baggage. There would be two terminal handlings for each of the state movements, and if there were four state movements to equal the average interstate haul, then the railway company would handle a piece of baggage eight times as against handling it once within the state on the interstate haul. That is to say, two passengers enter the cars at St. Paul, one will ride 160 miles and the other 40 miles. They load their baggage; after the train has gone 40 miles it stops and one of the men gets off and his baggage is put off; another man gets on and his baggage is loaded, and at the end of an additional 40 miles the train again stops and the

same procedure is gone through again; and again, at the end of 40 miles farther, that I believe would make the 160 miles, or four different passengers boarding and leaving the train, with their baggage loaded and unloaded, with eight exposures to hazards of personal injury and eight exposures of damage to the baggage and the cost of handling eight pieces of baggage, a sale of four tickets, and the accounting for four tickets as against the cost of handling one piece of baggage at St. Paul and the sale of one ticket. (Pages 1188, 1189.)

There are other reasons why the cost of handling state passenger traffic is greater than interstate which apply generally to branch lines in all of the States touching the west bank of the Mississippi river. That is, branch lines where the potentiality of service provided is not realized to the same extent as the potentiality of the trains engaged in largely carrying interstate passengers. There are the accommodations, but they are not utilized. Local trains must have the equipment, as a general railroad proposition, necessary to meet the greatest demand upon the district at any point. Say, for illustration, taking two points in Minnesota or two in Missouri, or anywhere, the number of cars that must be provided for that train is the maximum that will be used and may be used in the five miles or ten miles. This is particularly true of the more important towns where the trains will unload and fill up and distribute their passengers for a few miles beyond that town and run light perhaps until approaching another town of some importance. (Pages 1189, 1890.)

The average earnings per train mile for local trains is much lighter than on through trains, for the reason that they do not carry the same number of passengers per train mile. Those conditions are common to the operation of all railroads in this part of the country.

The equipment provided for local passenger train service runs in daylight as a general rule, as against the equipment in the through service being continually on the move, and there is a waste to the extent of the hours that the equipment is idle. Then again, local trains, while they are scheduled to consume a greater number of hours between two given points than the through trains, in reality, because of the frequent stops, must run even faster than the through train on the average in order to accomplish the schedule in the end. This affects expenses as to fuel and as to wear and tear. It is almost too plain a condition to state that the stopping and starting of trains cause greater wear and tear, and the wear and tear and strain on the draft-gear and equipment generally, than is caused to the trains while they are running. The difference in cost in operation between state and interstate passenger traffic would depend largely on the proportion of branch line mileage within the state. (Page 1190.)

I believe that I would be justified in expressing an opinion that it would cost *at least fifty per cent more* for state than interstate on the Great Northern in Minnesota, and my reasons are these: the relation of the state haul to the interstate haul and the relation of the branch-line mileage to the main-line mileage. It is almost axiomatic among railroad men that on branch lines not more than one-half of the potentiality

of the local train service can be obtained either in freight or passenger; that is to say, one-half of the service provided cannot be realized in use. (Page 1191.)

Testimony of James J. Hill.

(References are to record in the Great Northern case.)

Mr. Hill stated the reasons why it costs more to produce an intrastate passenger mile than an interstate passenger mile.

Mr. Hill said in substance following:

In getting at the cost of intrastate or short-haul passenger business, as compared with the cost of the interstate passenger business touching Minnesota, you would have to take the cost of the train. The local train as a rule would cost something less than the through train, because the local train might be a light train, two coaches and a baggage-car—it might have three coaches and a baggage car; a through train would have coaches and baggage-cars, eight or nine, or from seven to ten. So there would be more expense in hauling the through train because a heavier train. The engineer and fireman would be the same, the conductor and brakemen would be the same. Occasionally there would be an additional brakeman on the longer train. But the cost of maintenance, the cost of renewals and replacements—the banks would wash as much, the ties would decay as rapidly on the branch lines, if there was only one train a day or five trains a day. There would be a little difference in the wear of the rail, but after you had finished the trip, the number of passengers you had carried for fifty or one

hundred miles would determine what it would cost you. Now, from long observation on those light-line trains, I think the number of passengers to the coach would average from six to ten to the coach, and if you had two coaches you would average twenty passengers;—if that train cost you $1.10 or $1.20 a mile to run it with twenty passengers, it would cost six cents a mile per passenger; and we have a good many trains where the passenger cost is from 3½ to 5 or 6 cents or where the income is 40 and 50 and 60 cents a train mile. The cost per passenger would depend on how many passengers the train carried. (Pages 1313, 1314.)

The passenger car has changed within recent years, particularly in the West. They used to think that a plain car that was comfortable was all right. Passenger cars in service west of Chicago or in Minnesota are vastly better, as any one who travels in New England knows, vastly better and more modern than they are on the trains in New England, and I have never heard any passenger say that the railroad was indulging them in anything that was too comfortable. (Page 1315.)

There is the heating and cleaning of the car that is a considerable item. The washing of the car, heating, lighting, all have to be taken care of. A few years ago we had candles—they were very safe. On a branch line, however light, we do not want to sit in a car lighted by candles. That branch-line service, hardly any of it pays at all. Most of it is done at a heavy loss. When I say "pays" it doesn't pay the operating expenses. It doesn't pay the cost of moving the train,

without anything for the investment, in a great many cases. (Page 1315.)

I don't know that I could express an opinion as to the relative cost per passenger per mile for the short-haul business in the State as compared to the average of all. It will vary from twice in some cases to four times, just depending on the number of passengers carried in the train, largely. If the same number of cars are contained in the train every day, the cost of moving that train would be reasonably permanent and the variation would come from the number of passengers carried. The cost per passenger would be determined by the number of passengers carried—the number of passengers divided into the cost would give the cost per passenger. That varies so much that I wouldn't know how to make up those figures unless I went into a very long computation. I suppose it could be done. I have never done it except on particular trains for time enough to determine about what it would cost. We know every week the number of trips and the number of miles a train has made and how much money it has earned. (Page 1316.)

The methods employed by the Northern Pacific and Great Northern Companies for the division of common items of expense between the freight department and the passenger department are the best known and have long been used and approved.

The divisions made thereby were approved by the Master and by the Circuit Court in these cases.

In the Northern Pacific case, the division is made by Exhibit 79 Elliott, Vol. 10 N. P., and fully explained in the testimony of the Assistant Comptroller, William G. Johnson (p. 3248, Vol. 7 N. P.). The company's rules for such divisions are as follows: (pp. 3249-52, Vol. 7 N. P.)

"Northern Pacific Railway Company.
Dividing "Common" Operating Expenses Between "Passenger" and "Freight."

"All expenses incurred solely in connection with either passenger or freight service are so charged. Expenses not wholly assignable to either are divided as follows:

"Maintenance of Way and Structures

"All accounts on basis of revenue service engine miles except, "Maintaining Joint Tracks, Yards and Other Facilities—Cr.," which is based on the debit of the accounts involved.

"Maintenance of Equipment.

Superintendence	Revenue service engine mileage.
Steam Locomotives — Repairs	Individual engine mileage when possible, otherwise revenue service engine miles of current month.
Steam Locomotives — Renewals	Revenue service engine miles, preceding fiscal year.
Steam Locomotives—Depreciation	
Passenger Train Cars—Repairs	Passenger.
Passenger Train Cars—Renewals	
Passenger Train Cars—Depreciation	
Freight Train Cars—Repairs	Freight.
Freight Train Cars—Renewals	
Freight Train Cars—Depreciation	
Floating Equipment — Repairs	Revenue train mileage.
Floating Equipment — Renewals	
Floating Equipment—Depreciation	
Shop Machinery and Tools.	Revenue train mileage.
Injuries to Persons.....	
Stationery and Printing....	

Insurance	According to class of equipment, except that premiums on locomotives should be divided on basis of revenue service engine miles, and premiums on floating equipment on basis of revenue train mileage.
Other expenses	Revenue train mileage.
Maintaining joint equipment at Terminals—Dr.	Revenue train mileage.
Maintaining joint equipment at terminals—Cr.	Same as debit accounts involved.
Equipment borrowed—Dr. Equipment loaned—Cr.	Revenue service engine miles.

"**Traffic Expenses.**

On basis of revenue train mileage.

"**Transportation Expenses.**

Superintendence Dispatching trains Station employes Weighing and car service assns Station supplies and expenses	Revenue train mileage.
Yard masters and their clerks Yard conductors and brakemen Yard switch and signal tenders Yard supplies and expenses. Yard enginemen Enginehouse expenses—Yard Fuel for yard locomotives Water for yard locomotives Lubricants for yard locomotives Other supplies for yard locomotives	Switch engine mileage in each yard representing work performed for each class of service.
Operating joint yards and terminals—Dr. Operating joint yards and terminals—Cr.	Revenue train mileage.
Road enginemen Enginehouse expenses—Road Water for road locomotives.	Revenue service engine mileage. Class of service.

Fuel for road locomotives	Individual engine mileage.
Lubricants for road locomotives	
Other supplies for road locomotives	
Road trainmen	Class of service.
Train supplies and expenses	Revenue train mileage.
Interlockers, blocks and other signals—Operation	
Crossing flagmen and gatemen outside of yard limits	
Drawbridge operation	
Clearing wrecks	
Telegraph and telephone—Operation	
Operating floating equipment	
Stationery and printing	
Insurance	
Other expenses	
Crossing flagmen and gatemen within yard limits	Revenue service engine mileage.
Loss and damage—Freight	Freight.
Loss and damage—Baggage	Passenger.
Damage to property	Revenue train mileage.
Damage to stock on right-of-way	
Injuries to persons	
Operating joint tracks—Dr.	
Operating joint tracks—Cr.	

"General Expenses.

"All accounts under this head on basis of Revenue Train Mileage."

Substantially the same method was followed in the Great Northern Case. (Exhibit 47 Martin, Vol. 6 G. N., explained in his testimony, p. 955, Vol. 3 G. N.)

Mr. W. G. Johnson, Assistant Comptroller of the Northern Pacific Company, whose fairness and candor will, we feel certain, be conceded by appellants, and whose long experience in railroad accounting in a large way gives weight to his views, testified on this subject and among other things said: (p. 4217 et seq., Vol. 8 N. P. case.)

"Q. I want to refer to a subject that has had considerable attention paid to it during the taking of testimony here, and that is the method of distributing operating expenses in any state between the freight and passenger business, and ask you whether or not the method followed by your company and the others which have been shown to follow it, is, in your opinion, a practicable and just method of making such distribution, and ask you to give your reasons for so saying, if you do say so.

A. I believe the plan followed by the Northern Pacific produces results that are approximately correct, and I will enlarge upon that subject, by stating as follows. As to the division of operating expenses or the assignment of operating expenses to freight and passenger service, of the total operating expenses a large percentage is definitely determinable as being common to freight and passenger business, but practically all operating ex-

penses are common to both classes of service; take, for example, the items of expense in connection with the operations of trains; at first glance, it might appear that this expense is entirely chargeable to freight service when it covers the operation of a freight train, but it is a fact that of the total ton mileage of the Northern Pacific about eighteen or twenty per cent is company material, such as fuel, ties and other material used in connection with maintenance of way and structures. It is the common practice of the Northern Pacific (and I believe it is common on all other roads that divide operating expenses between passenger and freight) to assign the expense of operating a freight train to freight expenses, but the railroads do not keep track of the cost and division of the expense involved in hauling that company material for the use of the operating department; consequently the expense remains as a freight expense, whereas a part of the material, at least, may be used or be assignable to passenger service. *Vice versa*, passenger trains carry employes of the operating department, and the remarks made in connection with the expense of running freight trains are applicable to the cost of running passenger trains, because no charge is made for carrying those passengers. These two illustrations apply to other items of expense that are usually considered as being wholly chargeable to either class of service.

The most important item of common expense is the physical maintenance of the roadbed, track and structures, and it may be held that the revenue-train mileage basis either undercharges or overcharges one class of service, but there are so many factors affecting the accurateness of the division of this class of expenditure (and one of these factors of importance that has not been already mentioned in this case is that the cost of transporting the immense amount of material required for this branch of the service is by the method of accounting followed by all important

railroad systems charged to the freight service) that the best thought on railroad practice has never been able to find a basis that is more practicable and uniform than revenue-train mileage. The earliest record of the use of this factor, as far as my knowledge goes, is shown in a pamphlet issued in 1875 by Albert Fink, vice-president and general superintendent of the Louisville, Nashville & Great Southern Railroad, and the use of that factor has increased so that today we have definite knowledge of its use by the following important railway systems of the United States:

	Mileage.
Santa Fe System	9,350
Rock Island System	7,938
Burlington System	8,875
Pennsylvania System	11,080
Erie Railroad System	2,333
Louisville & Nashville System	6,891
Union and So. Pacific Systems	15,376
Great Northern System	6,499
Total	68,342
Northern Pacific System	6,285
Total mileage	74,627

which is about one-third of the entire railroad mileage in the United States.

As a result of much inquiry I am not aware that any railroad making division between freight and passenger uses any other basis than the revenue-train mile.

The Master: Not including switching?

Witness: Not including switching. The purpose and only purpose of expenditures upon road, structures, equipment and operation is to run freight—and passenger—revenue trains. Hence the revenue-train mile must, of necessity, afford the best and truest basis of division, all things considered, the fluctuating conditions and the operation of a road."

The facts stated by Mr. Johnson are not denied. It cannot be thought that any purpose to favor either class of business influenced the selection of this method of division. According to the evidence it is the only method approved by experience.

The Interstate Commerce Commission formerly required a division of the common items of expense between freight and passenger. In the forms of report required by it, the rule for such division was stated as follows:

> "Expenses which are not naturally chargeable to either traffic should be apportioned on a mileage basis, making the division between the passenger and freight traffic in the proportion which the passenger and freight train mileage bears to the total mileage of trains earning revenue."

More recently, the Interstate Commerce Commission has withdrawn the requirement that companies make such division. But many railway companies—at least those mentioned by Mr. Johnson, operating more than one-third of the total mileage of the United States—continue, for their own purposes, to make such division of expenses. The Northern Pacific and Great Northern companies make such division in each State, treating each accounting division therein separately. It is practically conceded by Mr. Hillman, the defendants' only witness on the subject, that every railway company in the country making such division (except the Minneapolis & St. Louis, concerning which there is no controversy here) adopts the same method. (See pp. 3734, 3915, 3918, Vol. 8 N. P. case.)

In these cases, both freight and passenger rates are under examination, and, therefore, complainants and the companies are without motive to charge either department any portion of the expenses of the other.

The method is reasonable.

Railroads exist for the purpose of moving trains. The train mile is the final product of all activities. The roadbed and structures exist for the passage and accommodation of trains.

The train mile is the common unit of expense.

The passage of a train, whether freight or passenger, is an exclusive use of the line, including roadbed and necessary facilities along the line.

The freight train is, as a rule, heavier than the passenger train, but the passenger train is faster than the freight train. It has superior rights, and on single track systems like these, freight trains must side-track for passenger trains to pass, thereby often requiring at one time from ten to thirty miles of the line.

Wear and tear on the track is not measured by weight alone. It is known to everyone that speed is an important element, and that this is illustrated by the fact that all trains are required to move slowly over weak bridges and soft tracks. Momentum, not weight, is the factor which imposes stress upon the roadbed.

Safety of passengers, as well as the speed of passenger trains, requires vast expenditures that would not be needed for the freight business alone. For example, at curves the outer rail must be elevated on account of the high speed of the passenger train, and this

renders the track less suitable for freight business, and because the track is adjusted for higher speed than that of freight trains, they produce greater injury to the track.

The expense of side-tracks used by the freight trains getting out of the way of passenger trains, and of labor and fuel incident to the delay; the expense of perfecting the track for higher speed, and of the additional wear and tear thereon, because not wholly suitable for the passage of the slower freight trains; the expense of transporting fuel and other supplies for passenger service (not now kept in the operating expenses at all) and also a just proportion of the cost of hauling track material and other supplies, should all be charged to the passenger business.

Station expenses, including waiting rooms and accommodations for the traveling public are very large, and these facilities are not used in the freight business at all.

Defendants' Evidence on the Subject of Extra Cost.

At the trial the defendants called no witness who was familiar with the particular conditions attending railroad operations in Minnesota on the lines of these companies, or with the facts affecting the relation of the cost of doing the intrastate business to that of doing the interstate business.

Complainants' testimony on this branch of the case was not opposed by any testimony of the same kind. The only evidence of any kind that was offered by the defendants consisted of calculations and opinions of Mr. Conway W. Hillman, a professional accountant.

We shall call attention:

1. To the principal matters now in issue between the parties upon which he gave testimony.

2. To his qualifications to speak on the subjects concerning which he testified.

3. To the principal features of his scheme which was offered in evidence and the merits of the same.

4. To the results which he reached.

5. To certain facts disclosed by his testimony and calculations, and their bearing upon the subject of the extra cost of the intrastate business over the cost of the other business.

The principal matters in issue concerning which Mr. Hillman testified.

Mr. Hillman's calculations or testimony did not extend to all matters essential to the determination of the issue of confiscation, and the principal matters now

in issue between the parties (as evidenced by the assignments of error herein—see assignments of error 12, 16, 17, 18, 19, p. 447, Vol. 1 N. P. case), concerning which he testified, were:

(a) The division between the freight department and the passenger department in Minnesota of that portion of the total Minnesota operating expenses which was not allocated directly to either department,—being about 40 per cent of the total.

(There is no controversy on this point in the Minneapolis & St. Louis case.)

(b) The division of the total freight operating expenses in Minnesota between the intrastate and interstate business.

(c) The division of the total passenger operating expenses in Minnesota between the intrastate and interstate business.

Note.—He did not make any calculations based on, or give any testimony concerning, the value of the property or its apportionment to the different classes of business.

There is no controversy between the parties as to the total amount of operating expenses incurred on the system or within the State, or the proper allocation of items incurred exclusively in the freight department or in the passenger department,—aggregating about 60 per cent of the total.

Mr. Hillman's qualifications to testify as an expert on the subject of cost of the intrastate business.

We claim that, although his testimony was admissible, Mr. Hillman was not qualified by any special experience or training in the matters under consideration to form or express an opinion of value on the

subject of the cost of doing the intrastate business.

His own description of his general education and qualifications appears at page 3269 et seq., Vol. 7 N. P. case.

He was fifty-two years old when he testified.

He graduated at Dickinson College in 1873.

He did some engineering work on railroads, and then entered the operating service of the Cumberland Valley branch of the Pennsylvania Railroad, and served successively as telegraph operator, scales clerk, freight clerk, ticket clerk, superintendent's clerk, agent, assistant dispatcher, and finally dispatcher, during a period of about five years.

He worked in the office of the treasurer of the Northern Pacific Railway Company in New York City, commencing in 1881, and kept records of stockholdings, and later had charge of paying dividends, and in 1888 was elected assistant treasurer of that Company, and continued to serve it and its leased lines and the Northern Pacific Express Company until 1895.

In 1895 he became auditor of an elevated railroad in Chicago, and organized its accounts and accounting department, and put the shops and road on a practical cost basis. The system of accounts continued to be used until changed by the Interstate Commerce Commission in 1907.

In 1903 he entered the employ of the Rock Island Road in the comptroller's office, and later in the insurance department of that Company.

In 1904 he left the Rock Island Road and "for a year and a half was engaged in accounting of various kinds."

In 1906 he "went with the accounting department of Baker-Vawter Company, as consulting accountant."

He then "took charge of the cost-accounting department of the Indiana Audit Company."

In 1907—the year of the commencement of these suits—he "established the company of which I am at present the head, the Mutual Audit Company, with headquarters at Louisville, Kentucky. * * * Since that time, I have been engaged continuously in this analysis of accounts for railroad rate purposes for the states of Kentucky, North Carolina, Alabama, Florida, Minnesota and South Dakota."

He was employed by the Minnesota Commission in May, 1908, within a year after he embarked in the business of accounting as an expert for states in railroad rate cases, and from that time on "kept in touch with the work" in the Northern Pacific, Great Northern and Minneapolis & St. Louis cases, until he testified in the spring and summer of 1909. (p. 3273.)

The principal purpose of his employment as an accountant in these cases seems to have been to establish for the Commission and the attorney general the cost of doing the intrastate business, freight and passenger, on the lines of these companies.

The matters concerning which Mr. Hillman testified were essential and difficult.

The rates complained of had been made by the Commission and by the legislature without the ascertainment of the cost of doing the intrastate business or of any part of it, or of the value of the property used, or, indeed, of the amount of revenue at any time received from the business covered by the rates. (See testimony of defendant Staples, p. 2731, 2732, et seq., 2744, 2776, and also p. 3026, et seq., Vol. 6 N. P.)

It is agreed by all that no railroad company ever kept, and that neither the Interstate Commerce Commission, Minnesota Commission or any other authority had ever prescribed, the keeping of or any method for the keeping of accounts for the purpose of showing the cost of doing intrastate business or interstate business, and it is the claim of complainants, supported by the opinions of all experienced railroad officials and by the decisions of the courts in cases similar to these, that there is no system of accounts known, and none can be devised, to keep separately the cost to railroad companies of doing different classes of business. Indeed, it was said by the defendant Commissioner, Charles F. Staples, in a paper read by him before the National Association of Railway Commissioners in 1907 (see p. 3025 et seq., Vol. 6 N. P. case):

> "To all who have taken an active interest in trying to determine with any degree of accuracy the cost of conducting any particular portion of the traffic of a railway company, the question presented is a most difficult one. To say that rate

making is a science is easy, to prove it would be most difficult. (p. 3025.)

"Who can name the traffic official who will undertake to set forth what it costs a railway company to conduct any particular traffic? To those familiar with the question it is unnecessary to point out why it cannot be done.

"While we believe it is impossible to determine the exact cost of moving any particular line or class of freight, it does not seem to be necessary in order to exercise an intelligent supervision. (p. 3025-6.)

"Unfortunately the public is unwilling to use any other means of determining the reasonableness of a rate than that of comparison. * * * (p. 3026.)

"Again, another contention on the part of the public is to undertake to show that rates are too high by showing the gross and net earnings of the company, always using, of course, the entire system, refusing to understand that when considering state and interstate business or rates you cannot treat them as having any relation one to the other. * * *" (p. 3026-3027.)

He further said that "the purely state business will not average to exceed 6 per cent of the entire business done over all the systems in the state," and supported the statement with statistics. (p. 3027-3028.)

Note.—The figures given by Mr. Staples at p. 3028-3029, as indicating the Minnesota intrastate business, are excessive, due to the conceded fact that certain interline interstate business in Minnesota, which was hauled only in Minnesota by the road making the report, was erroneously included in the intrastate business. This is spoken of throughout the record as "the error." The waybills were revised and

the figures used by the Master are correct; therefore 6 per cent is too high.

Mr. Staples enumerated and discussed with care the essential elements to be taken into account in railroad rate making, but he did not claim that there was or could be devised any system of accounts by which the cost chargeable to the relatively small intrastate business could be separately kept. The kind of "cost accounting" devised and advocated by Mr. Hillman at the trial seems never to have been known or heard of as a means of rate making or rate judging by Mr. Staples or any other member of the National Association of Railway Commissioners.

Mr. Staples' paper was read after the Minnesota Commission had made the merchandise order complained of and the order establishing commodity rates of September 1906, which were enjoined at the suit of the railroad companies, prior to the passage of Chapter 232, the commodity act complained of, and it appears that even then Mr. Staples agreed with all others having knowledge on the subject that no system of accounts could profitably be used for the ascertainment of the cost of the intrastate or any other particular line or class of business; and it is fairly inferable from his paper that the rates complained of were made without any such ascertainment.

The scheme of figures introduced by defendants was the invention of Mr. Hillman.

He testified that before his work in these cases no such division of cost between the intrastate business and the interstate business had ever been made or attempted (p. 3466 et seq., Vol. 7 N. P.); that

there can be found nowhere else in the world, excepting from his work, the method or rule for reaching by accounting methods the cost of the intrastate business as compared with the cost of the other business. (p. 3462.)

Mr. Hillman's conclusions are without probative value.

The inference may clearly be drawn that he is not qualified to express any opinion of value on the subject concerning which he testified, because: (a) He never occupied any position in railroad service affording him any opportunity to observe the facts or note the principles essential to or controlling the determination of cost of one class of business compared with that of another. No amount of experience of the kinds which he had could qualify one rightly to judge in such a matter. (b) The relation of cost of the different classes of business depends upon numerous facts, circumstances and conditions in each particular case, and these vary from time to time —even from day to day—on the same road, and on different parts thereof. (c) There are no established rules or authorative sources of learning upon the subject. (d) In short, none of the things essential to the formation of judgment were possessed by, or known to him.

His qualifications and methods were referred to by the Master (p. 254, Vol. 1 N. P. case) and by the court (p. 429, Vol. 1 N. P. case.)

The principal features of the method devised by Mr. Hillman, and the merits of the same.

We are not at all certain that we have extracted a complete and accurate understanding of what he intended from the great mass of exhibits and testimony given by him. The defendants' solicitors, before the Master and before the Circuit Court, failed to formulate, either in their briefs or oral arguments, any comprehensive statement of the rules or principles or methods by which he proceeded.

It is desirable, before a consideration of the principal features or details of his testimony, that something of an understanding of the general plan or outline of his scheme be had.

We shall first call attention to his own statements in answer to our request for a comprehensive statement of the rule or plan by which he proceeded. On May 29, 1909, when his cross-examination commenced, he was asked for such a statement. (p. 3459 et seq., Vol. 7 N. P. case.) He did not on that day comply with the request, but, by arrangement, he was given time to prepare his answer, and on June 22, 1909 (p. 3489 et seq.) he made a statement of "the general outline of the method which was adopted in making this division and which would be followed, you might say, in all divisions of similar character". (p. 3487.)

His statement was in substance and effect as follows, (p. 3487 et seq.):

1. The first point is the distribution of operating expenses to states. In this each operating division should have its expenses allocated to it as far as possible. The common expense is then distributed upon

the factor bearing directly on such expense. Overlapping operating divisions are divided upon allocation and distribution as above.

2. The second point is the distribution of operating expenses to freight and passenger. They are allocated between freight and passenger wherever possible. Common is on the detailed bases as noted in the discussion of the Northern Pacific account which was before us.

3. The third point is the determination of the cost of freight per ton mile handled on a through train and on a local train.

4. The fourth point is to determine the amount of inter and intra freight on through and local trains.

The cost derived from the third and fourth points is relative in its nature and is to be applied only to the cost of train movement expense items.

5. The fifth point is the determination of the division between inter and intra of all expenses other than train movement. This is in detail, as noted upon my testimony in the Northern Pacific case. We will then have the inter freight expense account and an intra freight expense account.

6. We then determine the amount of inter and intra freight earnings corresponding with the above charging of expenses.

7. The seventh step is the determination of the extent to which the proposed reduction of rates will affect the above earnings.

8. The eighth point is the determination of the operating percentage, inter and intra, on both the basis of the present earnings and of the earnings after the deduction made by the proposed rates; or you might call them the rates under consideration.

9. The ninth point is to determine the "charges to income," which are distinctly freight and depending upon operating conditions, into inter and intra.

10. The tenth point is the determination of the cost of through passenger trains as against local passenger trains.

11. The eleventh point is the determination of the density of traffic on through passenger trains and local passenger trains.

12. The twelfth point is to determine the passengers, inter and intra, using local trains and through trains respectively, and thus determine the cost of inter and intra passengers for train movement.

13. The thirteenth point is to determine the division of the operating expenses (passenger) other than train movement between inter and intra.

14. The fourteenth point is the determination of the passenger earnings, inter and intra, to correspond with the above division of expenses.

15. The fifteenth point is to determine the reduction which would accrue from the application of the proposed rates.

16. The sixteenth point is to determine the operating per cent of passenger business, inter and intra, on the present basis and the reduced basis.

17. The seventeenth point is to determine the "charges to income", closely allied to the passenger business depending thereon, between inter and intra.

18. The eighteenth point is the division of net "credit to income" of all items outside of interest on funded debt and dividends, and also the division of general earnings, which are not allied closely to either freight or passenger, into inter and intra.

19. The nineteenth point is the determination of the proper amount of capital or cost of road and equipment, to which the above net earnings are to apply, and determine the amount of such capitalization to interstate and intrastate.

> "I would state here that in this analysis of mine I have not gone into the proper amount of capital upon which the earnings should be based, as I did not consider that within my province." (p. 3489.)

20. The twentieth point is the application of the above earnings to such capitalization, intra freight and passenger and inter freight and passenger, giving the percentage of earning.

> "Q. That is a complete statement of the rule is it?
> A. Yes sir, a complete outline of the method.
> Q. Twenty separate divisions or operations?
> A. Yes sir.
> Q. Are the exhibits which you presented in your direct examination prepared in strict accordance with the rule which you have stated down to your nineteenth rule?
> A. Yes sir.
> Q. In every respect?
> A. Yes sir."

The issues now between the parties and which we shall here consider are substantially as follows:

(a) Division of common items of operating expenses between the freight department and the passenger department.

(b) Division of the operating expenses of the freight department and of the passenger department, respectively, between the intrastate and interstate business of each.

Attention is invited to the second, third, fourth, fifth, tenth, eleventh, twelfth and thirteenth operations referred to (not described) by Mr. Hillman, for it is upon these operations that rest the results of his divisions of the operating expenses to the different classes of business.

He was given full access to all the records of the company, and there was spent, as he claims, in the examination thereof the equivalent of four years work for one man in making the calculations in the Northern Pacific case alone. (p. 3451 and 3498, Vol. 7 N. P. case.)

His scheme of accounts had never before been applied, and the records of the company were not, *and could not*, be kept in such a manner as to furnish data necessary for the application of the scheme. His arithmetical calculations could not produce any accurate result unless they were based upon accurate data, and it will appear that he was not only without sufficient data to make the calculations contemplated by his scheme, but also that every essential step therein which is now under consideration depended upon arbitrary assumptions.

He was asked in cross-examination to specify the determinations which were mere approximations, and also to specify those which were arithmetically exact (p. 3490). He finally said (p. 3494):

"As outlined upon the general statement of the method and as determined in the case under question (the Northern Pacific road) none of the twenty or eighteen items are arithmetically correct."

The division of the common items of expense between the freight department and the passenger department, is in controversy between the parties, as is the division of the total operating expenses charged to the freight department and the passenger department respectively, between the intrastate business and the interstate business of each.

Mr. Hillman's operations 2, 3, 4, 5, 10, 11, 12 and 13 are the means by which he made these divisions, and each operation was made by him in the absence of any definitely known or exact basis or data.

It therefore appears that upon all points now in issue between the parties, his calculations were made *without any accurate element,* and of necessity it follows that as arithmetical or accounting conclusions his results are wholly without value; indeed, are logical absurdities.

If it be suggested that it is possible that, even though his results so obtained are not exact, still they may be fair approximations upon which a finding of the cost of doing the intrastate business might be based, that suggestion is answered by the fact that the factors which were used by him rested, not upon the judgment of any man familiar with the road in question or the conditions or circumstances under which the transportation was performed, but upon his own personal opinions, formed in the absence of knowledge, amounting to mere arbitrary assumptions. Before considering

the details of his *methods*, we shall call attention to the *results* which he reached. We claim that his results discredit his methods, and certain facts brought forward by him tend strongly to confirm the finding that the rates complained of are confiscatory, and to indicate that the Master's finding of the amount of extra cost attending the intrastate business over that of the interstate business is more than sustained by the evidence.

The Results of Mr. Hillman's Calculations.

Northern Pacific Case.

His calculations in the Northern Pacific case appear in Exhibits Hillman, 3-L, 3-M, 3-N, 3-O, 3-P and 3-Q, Vol. 10 N. P. case, and are all based on the business of that company for the year ended June 30, 1907. The Master's detailed calculations are based upon the year ended June 30, 1908. Therefore, exact comparisons between his conclusions and the findings of the Master cannot be made.

He reached the conclusion that the operating expenses chargeable to the several classes of business, respectively, of this Company in Minnesota for 1907, consumed percentages of earnings therefrom as follows:

Intrastate passenger.....58.89 per cent.
Interstate passenger.....51.69 per cent.
Intrastate freight.....55.21 per cent.
Interstate freight.....54.47 per cent.

(Master's Report, p. 257-258, Vol. 1 N. P. case.)

(Ex. 3-M Hillman, Tables 9, 13, Vol. 9 N. P.)

Note.—He made a mistake in his calculations, and the figures upon his exhibit may not be taken as indicating his own claim. If the mistake had not been made, his results would have indicated a higher operating percentage for the intrastate freight business. (p. 4154 et seq., Vol. 8 N. P. case.) This, according to his own admission, increased the intrastate net earnings by $51,173.05. (p. 4155.) Hereafter in this brief it will be shown that he virtually admitted facts which indicate that his intrastate net freight earnings were more than $207,000.00 too high.

The intrastate net freight earnings, as found by him, Exhibit 3-M, Table 16, amounted to $787,253.63. If $59,184.35 (the amount of the mistake as found by W. G. Johnson, p. 4156) be deducted on account of the mistake, there would remain $728,069.28, sufficient to pay a return of 6.6+ per cent upon $10,867,837, the valuation apportioned to that business by the Master.

The defendants object to the valuation and apportionment as made by the Master, but we cannot ascertain from the record what amount they are willing to concede.

The intrastate net passenger earnings, as found by him, Exhibit 3-M, Table 16, were $422,825.86, sufficient to pay a return of 5.1+ per cent on $8,159,782, the valuation assigned by the Master to that business. (See table, p. 264, Vol. 1 N. P. case.)

The total net intrastate earnings, freight and passenger, as shown by Hillman, amounted to $1,210,896.52, less $59,184.35, on account of mistake, leaves $1,151,712.17, or sufficient to pay about 6.05 per cent on $19,027,619 of valuation assigned to such business by the Master. (Ex. 3-M Hillman, Vol. 9 N. P. case.)

The above assigned valuations are on the basis of earnings. If apportionments of value be made on

the basis of operating expenses, the intrastate return, both freight and passenger, will be less than six per cent, on the basis of net earnings claimed by the defendants. (See p. 265, Vol. 1 N. P.)

It therefore appears that on the Northern Pacific road the intrastate rates complained of do not yield enough net earnings, even as claimed by defendants, to give a reasonable rate of return upon the Master's valuation apportioned on either the revenue basis or the operating expenses basis.

Mr. Hillman's Results in the Great Northern Case.

Total Minnesota Business.

He reached the conclusion that operating expenses chargeable to the several classes of business respectively, of this Company, in Minnesota for 1908, consumed percentages of the earnings therefrom as follows:

Intrastate passenger.....67. per cent.
Interstate passenger.....59.2 per cent.
Intrastate freight.....41.81 per cent.
Interstate freight.....60.58 per cent.

By his summary, Exhibit G, Table 13, Vol. 5 G. N. case, he shows total net earnings of $7,991,505 (this includes "miscellaneous income" from outside investments as we understand his statements, of $72,453.93), sufficient to pay 5.06+ per cent on the valuation $138,425,291 found by the Master.

Passenger Business.

(Exhibit G, Table 13, Vol. 5.)

The total net passenger earnings, as found by him, were $1,579,417.78, sufficient to pay 5.3+ per cent on $29,623,012, as found by the Master.

The intrastate net passenger earnings, as found by him, were $686,315.49, sufficient to pay 4.2+ per cent on $14,243,633, as found by the Master.

The interstate net passenger earnings, as found by him, were $893,102.29, sufficient to pay 5.8 per cent on $15,379,379, as found by the Master.

Freight Business.

The total Minnesota freight net earnings, as found by him, were $6,339,633.29, sufficient to pay 5.8+ per cent on $108,802,279, as found by the Master.

The intrastate net freight earnings were $1,481,-418.72, sufficient to pay more than 9 per cent on $16,-442,200 of valuation as found by the Master.

The interstate net freight earnings were $4,858,-214.57, sufficient to pay 5.2+ per cent on $92,360,079.

Note.—Exhibit G, Table 13, Hillman, Vol. 5 G. N. case, shows miscellaneous income above referred to of $72,453.93—divided $19,939.32 to the intrastate business and $52,514.61 to the interstate business. No division is made between the freight department and the passenger department. This sum was taken into account in arriving at the rate of return on all Minnesota business, as above stated, but was not taken into account in the subsequent calculations.

The passenger rates are shown by Hillman to be confiscatory on the Great Northern.

There is no possible view of the evidence that will justify any change in the findings or apportionments of valuation, as made by the Master, that would result in producing a rate of return from the intrastate passenger business sufficiently high to make it reasonable. The rate of return, as derived from Mr. Hillman's own divisions of cost, is 4.25+ per cent. In order that the intrastate net passenger earnings be sufficient to pay 7 per cent, valuation assigned thereto must be reduced in proportion as 7 is to 4.25, or 60.7 per cent of the amount found by the Master.

It therefore appears that upon the showing of the defendants, the passenger rates complained of are confiscatory on the Great Northern road.

Hillman's determination that the net income from the intrastate freight business is a sum sufficient to pay more than 9 per cent on the valuation assigned thereto by the Master is obviously wrong.

Mr. Hillman's net intrastate freight earnings are sufficient to produce a return of more than 9 per cent on the value apportioned to that business by the Master, *after deducting the losses* which he estimated would have resulted to that business if the Commodity Act had been in effect. Such losses, as he estimated them, would amount to $129,852.53. If that amount be added to $1,481,418.72, there would be produced $1,611,271.25, sufficient to pay more than 9.7 per cent upon the valuation assigned to that business by the Master.

This rate of return is so high when compared with Mr. Hillman's corresponding results in the other branches of business on the Great Northern road, or

with his results in the Northern Pacific case, based on 1907 the better year, that it deserves further examination.

On the earnings as they actually were in 1908 (the estimated commodity losses not being deducted) on Mr. Hillman's showing it appears that only *39.9 per cent* thereof were consumed by operating expenses. But he also determined that in the interstate freight business operating expenses amounted to *60.58 per cent* of earnings. (See Master's findings, p. 258, Vol. 1 N. P. and also Exhibit G Hillman, table 11 Vol. 5 G. N. case.)

In other words, Hillman found that it costs the Great Northern over 51 per cent more to earn a dollar in its Minnesota interstate business than in the intrastate business.

By Exhibit 53 Ward, Vol. 6 G. N. case, it appears that in Minnesota, excluding the Mesabi division, the principal business of which is the transportation of iron ore in interstate commerce, the average revenue per ton per mile received on the intrastate business was 1.360 cents, and on the interstate business touching Minnesota 0.791 cent. 39.9 per cent (the intrastate operating percentage claimed by Hillman) of 1.36 cents (the average intrastate revenue) produces 5.426+ mills as the cost of the intrastate freight business per ton per mile. 60.58 per cent (the interstate freight operating percentage, as claimed by Hillman) of 0.791 cent (the average revenue per ton per mile in the interstate freight business) produces 4.791+ mills as the cost per ton per mile of doing the interstate freight business.

That is to say, it costs 88.3+ per cent as much per

ton per mile to conduct the interstate freight business touching Minnesota as to conduct the intrastate freight business on the Great Northern road in Minnesota, *according to the testimony of and calculations introduced by Mr. Hillman.*

But by Exhibit 53 Ward, Vol. 6 G. N. case, it appears that in Minnesota, excluding the ore division above referred to, the average intrastate haul is *116.9* miles, while the average interstate haul of the business touching Minnesota is *621* miles. It is axiomatic that as distance increases, the cost per ton per mile decreases. This is recognized in every schedule of rates. The difference between the average haul of the intrastate business as compared with that of the other is so great in this instance that a very much greater excess of cost per ton per mile is to be expected in the intrastate business than in the interstate business.

Let us examine the schedules of rates complained of, and compare Hillman's conclusions as to the relation of interstate cost with the corresponding allowances included within the rates themselves for distances corresponding to these average hauls.

Under the class rates complained of, the first class rate for 115 miles is 33.56 cents, and the rate per ton per mile is 58.4 mills. For 500 miles the rate per one hundred pounds is 74.72 cents, and the rate per ton per mile is 29.9 mills, about one-half as much as is allowed for a haul of 115 miles. But the average haul of the interstate business touching Minnesota is 620 miles, and if the rate be extended to that distance on the principle on which it is made, it would be for one hundred pounds 80.6 cents, or 26 mills

per ton per mile, or only 44+ per cent of the 115 mile rate, as against an average of 88.3 per cent of cost of the long haul to the short haul business, as found by Hillman.

That is to say, Hillman's intrastate ton mile cost for the distance of 115 miles, being 100, the interstate ton mile cost for the distance of 620 miles is 88.3,—that is, as 100 is to 88.3. But the Commission's rates are as *100 to 44+*.

The same relation of rates for 115 miles to those for 620 miles exists in each of the other nine classes as that shown in the first class.

Corresponding relations may be shown with respect to the commodities covered by the rates complained of:

The wheat rate for 115 miles is 8.2 cents per hundred pounds, or 14.3 mills per ton per mile. If the schedule be extended to a distance of 620 miles, it would be 14.8 cents per one hundred pounds, or 4.77 mills per ton per mile, which is but 33.3+ per cent of the ton mile rate for 115 miles, to be compared with 88.3 per cent, as claimed by Hillman.

That is, Hillman's relation of cost is as 100 to 88.3. and the legislature's relation of rates is as 100.0 to 33.3+.

We have in like manner calculated the corresponding rate relations on the other commodities covered by the Act. Chapter 232, complained of. They are as follows:

	For 115 Miles.	For 620 Miles.
Coarse grains, etc.....	100 to	32.8
Lumber, etc.....	100 to	30.6
Cattle and sheep in D. D. cars.....	100 to	37.4
Hogs and sheep in S. D. cars.....	100 to	37.8

Hard coal	100 to 49.4
Soft coal	100 to 49.3

While it is not to be expected that the relation of cost of the intrastate business to that of the interstate business will be as to each commodity or class of freight the same as such relation when the average of all is taken, yet the rate relation should bear some similarity to the cost relation. The cost relation of the intrastate business to that of the interstate business, as found by Hillman, is so low that, if he is right, the Minnesota intrastate rates (these alone are within the jurisdiction of the State) ought to be further reduced about 50 per cent on the Great Northern road, in order that they may be proportionately fair as compared with the interstate rates when measured by cost of doing the business.

Further light will be thrown upon Hillman's determination that it costs the Great Northern Railroad less than 40 cents to earn a dollar in its intrastate business, as against more than 60 cents to earn a dollar in its interstate business, by comparison of the same with corresponding determinations in the other cases. We shall make such comparisons after a statement of his results in the Minneapolis & St. Louis case.

Mr. Hillman's Results in the Minneapolis & St. Louis Case.

By Exhibit L, Table 14, Vol. 5 M. & St. L. case, Mr. Hillman gives a summary of the earnings and operating expenses of that company for the year ended June 30, 1908.

He reached the conclusion that the operating expenses chargeable to the several classes of business, respectively, of this company in Minnesota for that year consumed percentages of earnings therefrom as follows:

Intrastate passenger.....62.54 per cent.
Interstate passenger.....63.67 per cent.
Intrastate freight.....48.19 per cent.
Interstate freight.....85.03 per cent.

The intrastate freight operating percentage was calculated by him after he deducted from earnings the amount of losses which he estimated would have resulted if Chapter 232 complained of had not been enjoined.

The Master calculated that such operating percentage would have been 41.9 per cent, on Mr. Hillman's basis, if such estimated losses had not been deducted. (p. 258, Vol. 1 N. P. Case.)

By his Exhibit L, Table 14, he reached the conclusion that if the commodity rate act complained of had been in effect, the intrastate freight gross earnings would have been $436,285.31, and that the company would have saved, over operating expenses, $226,053.51 thereof, and he also determined that out of $1,099,-

155.95, interstate freight gross earnings, the company was able to save, over operating expenses, only $190,600.40 (without deducting any losses on account of interstate rate reductions which would have followed the application of the commodity rates which were enjoined).

If the losses which would have resulted to the interstate freight business by the application of the commodity rates complained of had been deducted from the gross earnings of that business, as shown by Mr. Hillman, the operating percentage thereon would not have been less than 90 per cent. (For such losses see Exhibit 14-A Tittemore, Vol. 6 M. & St. L. case.)

Hereafter in this brief, attention is called to the exhibits and testimony in the record which show that by far the larger portion of the interstate freight business of this company yields more per ton mile than does the corresponding intrastate business.

By the same table he shows the conclusion that in the passenger business, on the same rates on the intrastate and interstate business, it costs more to earn a dollar in the interstate business than in the intrastate in Minnesota, notwithstanding the former has only one terminal service and the latter has two terminal services therein.

On Mr. Hillman's showing, the rates complained of are confiscatory on the Minneapolis & St. Louis Road.

To the intrastate passenger business the Master assigned $3,215,339.44 of total valuation (p. 274, Vol. 1 N. P.) Hillman finds net earnings, over operating ex-

penses (not including taxes, as it seems from his Table 14 of Exhibit L, Vol. 5 M. & St. L. case), to be $147,599.23, or sufficient to pay only 4.59 per cent on such valuation.

To the intrastate freight business the Master assigned $4,885,673.71 of the total Minnesota valuation. Hillman finds the net earnings of such business, over operating expenses (not including taxes), to be $226,052.51, or sufficient to pay a return of only 4.62 per cent on such valuation.

To the interstate passenger business the Master assigned $2,724,827.32. Hillman finds the net earnings, over operating expenses (not including taxes), to be $128,818.73, sufficient to pay 4.72 per cent on such valuation. (Master's Report, p. 274, Hillman's Table 14, Exhibit L, Vol. 5 M. & St. L. case.)

To the interstate freight business the Master assigned $10,782,623.53 of the total valuation. Hillman makes the net earnings, over operating expenses, only $164,546.95, or sufficient to yield a return of 1.52+ per cent on such valuation.

Note.—If the Minnesota interstate loss of $66,842.46, which would have resulted if Chapter 232 had not been enjoined, be deducted from such net earnings, the rate of return upon such property valuation would be but little in excess of one per cent.

It is apparent that upon the defendants' figures on the business of 1908, as well as upon the Master's figures of 1907, all of the rates complained of are confiscatory on the Minneapolis & St. Louis Road.

The net earnings from the whole business or from any class thereof are not sufficient to pay a reasonable rate of return upon substantially more than one-half the value of the property, as found and apportioned by the Master.

Mr. Hillman's Results on the Different Roads Compared.

Hillman's results by operating percentages, as aforesaid, are, for the purpose of convenient comparison, stated as follows:

	N. P.	G. N.	M. & St. L.
	%	%	%
Intrastate passenger..	58.89	67.	62.54
Interstate passenger..	51.69	59.2	63.67
Intrastate freight....(1)	55.21	(2)41.51	(3)48.19
Interstate freight....	54.47	60.58	(4)85.03

Note (1).—If estimated losses were deducted the N. P. intrastate freight operating per cent would have been 57.63. (Ex. 3-L Hillman, Vol. 9 N. P.)

Note (2).—If estimated losses had not been deducted, the G. N. intrastate freight operating per cent would have been 39.9.

Note (3).—If losses had not been deducted, the M. & St. L. intrastate freight operating per cent would have been 41.9. (p. 257 and 258, Vol. 1 N. P.)

Note (4).—If the interstate losses corresponding to those shown on Ex. 14-A Tittemore, Vol. 6 M. & St. L., had been deducted, the M. & St. L. interstate freight operating per cent would have been about 90.5.

Assuming the Northern Pacific operating percentages as standards (say 100), the ratio of the same to

the corresponding operating percentages in the other cases may be stated as follows:

	N.P.	G.N.	M.&St.L.
Intrastate passenger	100.	113	106
Interstate passenger	100.	114	123
Intrastate freight	100.	*75 **72	87 **75
Interstate freight	100.	112	**155 *165

Note:

* Estimated losses deducted.
** Estimated losses not deducted.

It will be observed: (see table next to the last.)

That in the Northern Pacific and Great Northern cases he finds that it costs more to earn a dollar in the intrastate passenger business than in the interstate passenger business, but reverses the situation in the St. Louis case.

That on the Northern Pacific, it costs a little more to earn a dollar in the intrastate freight business than in the interstate freight business; but on the Great Northern, it costs about 50 per cent more to earn a dollar in the interstate business than in the intrastate business; and on the Minneapolis & St. Louis, it costs from 80 to 90 per cent more to earn a dollar in the interstate business than in the intrastate business.

In the passenger business, both intrastate and interstate, the Northern Pacific operating percentages are less than the corresponding percentages on the Great Northern and on the St. Louis.

In the intrastate freight business, the Northern Pacific operating percentage exceeds the corresponding percentage on the Great Northern by about 40 per

cent of the latter, and the corresponding percentage on the Minneapolis & St. Louis by over 30 per cent of the latter. That is to say, according to Mr. Hillman's findings, it costs the Northern Pacific about 40 per cent more to earn a dollar in the intrastate freight business than it does the Great Northern, and over 30 per cent more than it does the Minneapolis & St. Louis.

In the interstate freight business, the situation is reversed, and it costs the Great Northern 12 per cent more to earn a dollar than it does the Northern Pacific, and it costs the Minneapolis & St. Louis from 55 to 65 per cent more to earn a dollar than it does the Northern Pacific.

These results appear strange when it is remembered that on like rates on each system the interstate business and the intrastate business, both freight and passenger, are conducted on the same road, by the same instrumentalities, by the same men and at the same.

How can the Great Northern Company earn an intrastate dollar for 40 cents when it costs the Northern Pacific 55 cents, while at the same time it costs the Great Northern over 60 cents to earn an interstate dollar, against 54 cents on the Northern Pacific?

It is to be remembered that over half the mileage of the Great Northern system in Minnesota is served by local trains only, except during a few weeks when grain is moving. There is a much smaller proportion of such mileage on the Northern Pacific system in Minnesota. From Mr. Hillman's *results* (though not from his testimony) it appears that intrastate business can be done more cheaply on the system having the greater mileage served by local trains only, while the reverse is true of the interstate business. By

53 Ward, it is shown that about one-fifth of the ton miles on the Great Northern road in Minnesota are of iron ore hauled from the Mesabi range to Superior in Wisconsin. This business is done at lower cost in proportion to revenue therefrom than any similar volume of business of any of these systems. It will not be claimed that there is any corresponding business, intrastate on the Great Northern, or within Minnesota on any other line of road. From this important fact, it is clearly inferable that the interstate freight cost on the Great Northern road is less than the corresponding cost on the Northern Pacific. But, here again, Mr. Hillman's conclusions reverse the ordinary course of things.

By comparing the results in the Northern Pacific case with those in the Minneapolis & St. Louis case, still more astonishing things are disclosed. According to Hillman it costs the Northern Pacific more than 30 per cent in excess of the cost to the Minneapolis & St. Louis to earn a dollar in the intrastate freight business, but it costs the Minneapolis & St. Louis from 55 to 65 per cent more to earn a dollar in the interstate freight business than it does the Northern Pacific.

The gross freight earnings per mile of road on the Northern Pacific in Minnesota were about $10,000.00. (See Table, p. 624, Vol. 1 N. P. case, and Exhibit 80 Elliott, Vol. 10 N. P. case, for bases to make calculations.)

The gross freight earnings per mile of road on the Minneapolis & St. Louis were less than $4,000 per mile. (See Exhibit L Hillman, Table 14, and Exhibit 3 Scott, Vol. 5 M. & St. L. case.)

On the Northern Pacific road, the net freight earn-

ings, intrastate and interstate taken together, were more than $4,200.

On the Minneapolis & St. Louis road, the net freight earnings, intrastate and interstate taken together, amounted to only $1069, and the total of all of the net earnings of that company, as computed by Mr. Hillman in 1908, amounted to only $1712 per mile of road.

(These calculations are made from the tables of results in the Master's Report, Exhibit 80 Elliott, Exhibit 3 Scott and Exhibit L Hillman, Table 14. all above referred to.)

It is well known that, other things being equal, the cost decreases as volume and density of traffic increases. Yet, Mr. Hillman finds that in the intrastate freight business, the Minneapolis & St. Louis Company can earn a dollar by the expenditure of about 40 cents, while it costs the Northern Pacific 55 cents, notwithstanding the net freight earnings on the Northern Pacific road in Minnesota are more per mile of road than the gross freight earnings on the Minneapolis & St. Louis road, and more than four times its net freight earnings, and about two and one-half times its total net earnings from all sources, including both freight and passenger.

The intrastate freight operating percentages, as found by Mr. Hillman in the Great Northern case and in the Minneapolis & St. Louis case, cannot be observed in comparison with the other operating percentages to which we have called attention, without the thought that purpose and intention to support the rates complained of controlled the results which he reached.

His results discredit him.

Mr. Hillman's Method of Division of Operating Expenses Between the Freight Department and the Passenger Department.

Northern Pacific and Great Northern Cases.

As stated by the Master in Subdivision XVI. of his Report, p. 252-255, Hillman's division of expenses between the freight department and the passenger department resulted in taking more than $400,000 from the passenger expenses and adding them to the freight expenses in the Northern Pacific case, and $933,694 in the Great Northern case. It was stated by the Master (p. 254, Vol. 1 N. P.):

> "If the view of the Master as to what is a reasonable rate of return, and his valuations, are accepted and approved, the Hillman method, both as to division of freight and passenger, and his methods of determining the per cent of return on state business, would not, if adopted, change the decree to be entered, either in form or substance. It would, however, make a wide spread between the per cent of return from each class of business, so wide as to itself suggest that the division made by him was an improper one, greatly favoring, as it does, the net revenue from passenger business."

In order the better to point out the defects in his method of dividing operating expenses between freight and passenger, we will first call attention to:

Some of the Principal Details.

Exhibit 3-M Hillman, Vol. 9 N. P. case, consists of sixteen separate tables. The tables relating to

division of expenses between freight and passengers are the following:

Table 1 is a copy of the books of the company, showing the operating expenses in Minnesota, divided on each division therein between freight and passenger.

Table 2 relates to divisions over-lapping the State line, and the apportionment of expenses to the State.

Table 3 shows the engine mileage and the train and car mileage on divisions appertaining to Minnesota.

Table 4 includes, among other things, the results of Mr. Hillman's division of operating expenses between freight and passenger.

Note.—In the Great Northern case, the corresponding showing appears on Exhibit G, Vol. 5 G. N.

Exhibit 3-M Hillman, Table 4.

This is a table of seven double columns, in each of which is entered a different division of operating expenses between freight and passenger on the Northern Pacific road for the year 1907, by detail of accounts, more than ninety in all.

Double column one shows the division as made by the company. (The rules above quoted, appearing at 3249 et seq., Vol. 7 N. P., were applied by the company to each accounting division.)

The second double column has a caption "Peabody exclusive of switching," and is the same as the basis employed by the company, excepting that the rule was applied to the State as a whole, instead of to the divisions therein separately.

Note.—The results shown by these two divisions are not very different. Notwithstanding, the rules applied are followed by every company in the country making the division, except the Minneapolis & St. Louis, Mr. Hillman marked them "obsolete." (p. 3918, Vol. 8 N. P.)

The third double column has a caption "Prof. Myers," and was represented by Mr. Hillman to be the method followed by the Wisconsin Railroad Commission in a passenger rate case it considered a few years ago. (*Buell v. C. M. & St. P.*, Vol. 1, 508.)

The fourth double column has a caption "Hillman (1)", and shows results produced by a method devised by him.

The fifth double column has a caption "Hillman (2)", and shows the results produced by another method devised by him.

The sixth double column has a caption "Peabody including switching," and was *at first* by Mr. Hillman erroneously represented to be a method recently adopted by the Santa Fe, under the direction of Peabody, a statistician of that company.

The seventh double column shows results which are the average of those shown in columns 3, 4, 5 and 6, it being the purpose to show that method "Hillman (2)" produced results near to the average of the four methods referred to.

Mr. Hillman adopted for his computations the method shown in "Hillman (2)." By means of this he reduced the amount which the company had charged to the passenger department by more than $415,000.

The items on which the principal reductions were made are as follows: 2, 3, 4, 5, 8 and 35 in the "conducting transportation" general account, and 46 and 50 in the "maintenance of equipment" general account, and practically all of the items, 56-74 inclusive, in the "maintenance of road and structures" general account, and all of the items under the "traffic expenses" general account, and substantially all of the items, 83-95 inclusive, in the "general expenses" general account.

In short, he found in his method "Hillman (2)" a basis for the division of practically all of the *common items* of expense, charging a lower amount to the passenger business than is charged in the method generally employed by railroads.

It is worth while briefly to consider some of the principal features of the exhibit.

The method shown in column 6, which is marked "Peabody including switching," never existed, as Mr. Hillman himself was obliged to concede during his cross-examnation. (See p. 3725 et seq., 3802, 3910, 3912-3915, 3918, Vol. 8 N. P.)

The testimony cited shows that Mr. Hillman, after much delay, coupled with apparent unwillingness so to do, furnished the printed instructions in use on the Santa Fe road; that the instructions relating to the division of the maintenance of way and structures account were to be divided between freight and passenger "on the basis of respective train mileage" (p. 3912); that the instructions were substantially the same as the rules followed by the Northern Pacific and Great Northern hereinbefore quoted (p. 3913);

that the language used in the Santa Fe instructions should be construed to mean the same as the above mentioned Northern Pacific rules (p. 3914); that every similar instruction by every company with which he was familiar is always construed by the accountants of the company to mean the revenue train mileage, producing the same result as that produced in the Northern Pacific division (p. 3915); that he had never been informed that the Santa Fe Company had changed from the method followed by the Northern Pacific and which is general among railroads (p. 3918); and was compelled to admit that he had marked on his Table 4 as "obsolete" the method which was followed generally by railroads all over the country (p. 3918).

A reason why the method called "Peabody including switching," which appears in double column 6, was included was to support the claim that the division of common items of expense for the maintenance of way and structures should be made by taking into account switch engine mileage, and, adding to the freight train mileage 95 per cent of such switch engine mileage, and to the passenger train mileage 5 per cent, and so assign to each class of business such part of the total expenses so divided as such combined mileage of each is to the total.

The switch engines are employed in the yards at terminals for the most part; passenger trains and freight trains use the railway lines. It is difficult to see how mileage performed by switch engines in the terminal yards at St. Paul, Minneapolis, Duluth and Staples are at all related to the matter of dividing the

cost of maintaining the road—renewing rails, ties, bridges, etc.—outside of the yards.

All of the items under the transportation expenses account, relating to yards, switching, etc., are by the companies divided on the basis of the switch engine mileage; that is, such proportion of the expenses is assigned to the passenger business as the switch engine mileage in the passenger business is to the total, and under the very first provision of the rule above quoted, "all expenses incurred solely in connection with either passenger or freight service are so charged", the maintenance of facilities used exclusively for either department would be charged to that department. At stations along the line, for the most part, there are no switch engines; there the switching of freight trains is done by the freight engines, and the switching of passenger trains by the passenger engines.

The method called "Prof. Meyers", referred to in column 3 of his Table 4, was included for the purpose of showing that his two methods "Hillman (1)" and "Hillman (2)" produced substantially the same result as that which would be reached if the method followed in the Wisconsin passenger rate case above mentioned were adopted. A distinguishing feature of this method is the manner of division of the maintenance of way and structures expenses. Each of the items 56-74 is considered separately and as to each it is said that repairs, etc., are made necessary by two causes: (1) wear and tear, (2) the elements—"weather stress." As to each item a certain percentage of the total expense is attributed to each cause, e. g., to rails 90% and 10% to weather, to ties 10% is charged to wear and 90% to weather, while it is said that the total cost

of fences should be charged to weather, etc. The wear and tear proportion, according to the method *which was in fact followed by the Wisconsin Commission in the C., M. & St. P. Ry. passenger rate case*, were divided on the *straight train mileage basis*, and the weather stress proportions were divided on an earnings basis. But in the division made by Hillman in column 3, under the caption *"Prof. Meyers"* (meaning B. H. Meyers, formerly member of the Wisconsin Railroad Commission, now a member of the Interstate Commerce Commission), *he did not use straight train mileage to divide the wear and tear proportions, but used train weights.*

Applied to the facts in the Northern Pacific case, train mileage would have assigned 45.2 per cent to passenger and 54.8 per cent to freight, while Hillman's train weights assigned 18.352 to passenger and 81.648 to freight. (p. 3877, 3880, 3881, 3884-8, *3908*, Vol. 8 N. P.).

In other words, Mr. Hillman erroneously represented that the "Prof. Meyers" method produced a lower charge of expenses to the passenger business than it ıld if it had been followed correctly, and from the percentages above mentioned it appears that the difference would be great.

Therefore, after cross-examination, it was made to appear by his own testimony: (1) that the two methods which he referred to in Table 4 of Exhibit 3-M, in columns 1 and 2 and marked "obsolete", are in general use and approved by all experienced men; (2) that the so-called "Prof. Meyers" method, referred to in column 3, does not fairly represent the method which it purports to follow; (3) that the so-called "Peabody

including switching" method, referred to in column 6, was never employed on the Santa Fe road, and was never prescribed therefor by Mr. Peabody, and inasmuch as the methods "Hillman (1)" and "Hillman (2)", referred to in columns 4 and 5 respectively, were both devised by him, it follows that the results shown in column 7 as the "average of the last four columns" are meaningless, being the average of four different sets of results, expressing various opinions of Mr. Hillman himself.

Mr. Hillman's Percentages for Division of Common Items of Expense Between Freight and Passenger in Northern Pacific Case

In some cases, he divided the whole item under consideration by applying thereto the percentages which were in his judgment appropriate, and, in other cases, he first separated the item into parts on some basis that seemed right to him and then applied such percentage to the parts.

It is apparent that the correctness of his result depends wholly upon his judgment in selecting the factors or percentages.

We shall now call attention very briefly to some of the percentages used to make the principal divisions, in order that a general view of his scheme may be had. Some of the percentages used are stated below.

75.21 per cent freight, 24.79 per cent passenger, based on certain allocations, were used for division of item 2, station agents, clerks and laborers, (p. 3329, Vol. 7 N. P.) but these percentages, even on Mr. Hill-

man's own basis, are concededly wrong. (See p. 3737 et seq., Vol. 8 N. P.)

Items 3 and 4, station supplies and station furniture, were divided on the same basis as item 2.

76.56 per cent freight, 23.44 per cent passenger, based on car movement, were employed to divide item 5, switchmen and watchmen. (p. 3333, Vol. 7 N. P.)

54.77 per cent freight, 45.23 per cent passenger, based on train mileage, was employed for dividing one-half of item 8, telegraph expenses. 86.13 per cent freight, 13.87 per cent passenger, based on the division of the total of items 2, 3, 5 and 9, was used for dividing the other half of telegraph expenses.

70.75 per cent freight, 29.25 per cent passenger, based on certain allocations, was employed for a division of part of item 9, proportion of operating expenses of terminals. (p. 3335, Vol. 7 N. P.)

78.6 per cent freight, 21.4 per cent passenger, based on all preceding items, was employed to divide item 35, "superintendence" in conducting transportation. (p. 3340.) As a reason for this division, he said (p. 3340):

> "(He) is not a train-mileage man. The train mileage is an incident in his work, not the whole work; he has supervision of each one of these operations, he has control of the men, he attends to the distribution of the material, to see that it is properly expended; it is all under his supervision, and therefore his time is taken up by the supervision of these items and not looking over train mileage."

It would seem that all of the work of a superintendent is related either directly or mediately to the

running of trains, freight and passenger. Mr. Hillman called attention to the fact that much of his time was spent in overseeing supplies, repairs, etc., but the division of the item was made, not on the division in the maintenance of way and structures account, but on the conducting transportation account. It is arbitrary.

75.3 per cent freight, 24.7 per cent passenger, based on Hillman's division of the maintenance of way and structures general account, was employed for the division of item 46, repairs of work cars. (p. 3341, Vol. 7 N. P.)

80.16 per cent freight, 19.84 per cent passenger, based on all preceding items, was employed to divide item 50, supervision of equipment. (p. 3342.)

71.35 per cent, 28.65 per cent passenger, based on revenue train mileage, *including switching*, was used for the division of item 56, removal of snow and ice.

Note.—In Minnesota, the principal expense for removal of snow and ice occurs out along the lines. Take for example, a branch road having one freight train each way and one passenger train each way per day. It would seem fair to divide the expense of opening the road, by means of a snow plow or otherwise, between the two departments on the train mileage basis.

In the maintenance of way and structures general account, each of the controlling items was first divided into two parts, stating, according to his judgment and in the absence of knowledge of essential facts, (1) the amount due to wear and tear, and (2) the amount due to decay or weather stress. He divided the amount assigned by him to wear and tear on the basis of train weights, (including switch movement weights, which

were divided 95% to freight and 5% to passenger) thereby charging to freight 81.648% and to passenger 18.352%.

He divided the amount assigned by him to weather stress on the basis of so-called "net earnings" (these earnings were arrived at by subtracting from the gross earnings the amount of operating expenses—freight and passenger respectively—already ascertained), thereby charging to freight 72.76% and to passenger 27.24%.

The following table shows the percentages of the principal items charged by him to wear and weather, respectively:

Number and Title of Account.	Wear and Tear	Weather Stress
57. Repairs Roadway and Track.	10%	90%
60. Repairs Bridges and Culverts	15%	85%
61. Cattleguards, Crossings and Signs	25%	75%
62. Renewals of Rails	90%	10%
63. Renewals of Ties	17½%	82½%
65. Renewals of Frogs and Switches	22%	78%
67. Repairs of Fences		100%
72. Repairs of Telegraph		100%

By this method he reduced the passenger expenses in the maintenance of way and structures account alone $277,521.40 (p. 3718, Vol. 8 N. P.) out of a total reduction by him of $418,517.04 (p. 3716).

The factors used to make these divisions between wear and weather are arbitrary. Any other percentages for division of total of each item between wear and weather could as well be taken. There is no reason for such divisions at all. It can make no differ-

ence whether an expense for repairs is due to the one cause or the other. If it is right to divide any part of a repair or renewal item on the basis of train mileage or train weight or revenue, it seems to us that it must be right to so divide the total of such item.

Mr. Hillman's reason for dividing the weather stress proportions on an earnings basis is this: (p. 3344-5, Vol. 7 N. P. case.)

> "The renewals of decay or decadence or weather stress to freight and passenger *must come from net earnings* of the road, and I have *therefore* divided the remaining 90 per cent between freight and passenger on the basis of the net earnings of the road, freight and passenger, as shown by all accounts up to this point, which gives a percentage of 72.76 freight and 27.24 passenger * * *."

The reason given is absurd. The problem in hand was to ascertain "net earnings" and the use of that phrase was inaccurate, but assuming that he meant gross earnings less the operating expenses, freight and passenger respectively, which had already been ascertained, the same statement would be just as good a reason for the division of any other item as it is for this division. All expenses must come out of earnings. (See p. 3871, Vol. 8 N. P.)

A single illustration of the method by which these percentages were arrived at by Mr. Hillman will, we think, be justified.

Item 57, repairs of roadway and track, was divided 10 per cent to wear and tear, and 90 per cent to weather stress. The total amount of the item is $587,081.74, of which the company assigned to passenger $250,619.85, as against his $154,703.08. (See Exhibit

3-M Hillman, Table 4, Columns 1 and 5, Vol. 9 N. P.) Among the things included are the following items of labor: raising and tamping low tracks, tightening track bolts and spikes, putting in new bolts and spikes, laying new rails, distributing and laying new ties, piling and burning old ties, cutting weeds and grass, handling track material, repairs of track-tools and watch-houses, renewals of frogs and switches, general cleaning about stations and of right of way, ditching, putting ballast under track, patrolling track. (p. 3920, Vol. 8 N. P.)

It fairly appears that fully 16½ per cent of the total amount was expended for the labor of *laying new rails* (p. 3928) and rails included in item 62 is divided by him 90 per cent to wear and 10 per cent to weather. Labor laying new rails ought to be divided on the same basis as the cost of the rails is divided, and if so divided the element of track-laying labor alone assigned to wear would amount to more than *13 per cent* of the total of the *whole item 57*. His cross-examination on this subject is at pages 3920 et seq. It was fairly shown that no man, however intelligent, could estimate, or form any opinion worth anything, as to the proportion of item 57 attributable to weather stress, without an analysis of the expenditure in detail. He admitted he made no such examination (3926). *Yet on this one account alone he reduced passenger expenses $95,916.77 below that fixed by the company's division.*

(For Hillman's testimony on cross-examination as to his Table 4 of Exhibit 3-M, see pp. 3716 et seq. and especially pp. 3717-23; 3784-94, 3809, 3852, 3871-3921.)

Mr. Hillman's Table No. 5 of Exhibit 3-M Hillman, Vol. 9, N. P. Case.

This table is the key by which Mr. Hillman in his "cost accounting" made the division of more than 91 per cent of the total Northern Pacific freight operating expenses between the intrastate and interstate business.

Table 5 of Exhibit G Hillman, Vol. 5 G. N., is the corresponding table in the Great Northern case.

After making the division of operating expenses, by his Table 4 of the same exhibit, between the freight department and the passenger department, he then undertook the division of the freight operating expenses between the intrastate and interstate business. All the freight operating expenses are common between the intrastate business and the interstate business, and no part thereof can be allocated to either. (p. 3700, Vol. 8 N. P.)

For convenient reference, the Table 5 is here reproduced.

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DEFENDANTS' EXHIBIT 3-M. HILLMAN.—*Cont.*

TABLE No. 5.

NORTHERN PACIFIC RAILWAY.

Freight Movements (Tons and Ton Miles) Through Trains, Local Trains and all Trains.—Carloads, less than Carloads and Total Compiled from Agent's Abstracts, April and October, 1907.

	TONS		TON MILES					
	All Trains		Through Trains		Local Trains		All Trains	
	Inter	Intra	Inter	Intra	Inter	Intra	Inter	Intra
Carloads	1,054,837	286,681	159,050,710	15,507,897	44,954,383	17,663,649	204,005,093	33,171,546
Less than carloads	72,668	44,074	12,547,243	1,530,004	516,550	3,085,624	13,063,793	4,615,628
Total	1,127,405	330,755	171,597,953	17,037,901	45,470,933	20,749,273	217,068,886	37,787,174

By its caption, the table purports to show *"train movement (tons and ton miles) through trains, local trains and all trains,"* but it is not claimed by the appellants that it shows any of these things. It is admittedly a theoretical table showing Mr. Hillman's opinion as to how the freight—carloads and less than carloads, intrastate and interstate—were *"entitled to"* be moved, but through all of his work, the elements and factors appearing on the table were used *as if the freight had in fact moved in the manner indicated thereon.* That is to say, the factors appearing on Table 5 were used in connection with Table 6 for the purpose of ascertaining the train movement cost of doing the intrastate business and the interstate business. The Table 6, which will hereafter be referred to in detail, was contrived for the purpose of showing the relative cost of local and through trains (see division C thereof) and the relative cost of interstate business and intrastate business. (See division D thereof.) No claim is made that the freight actually moved as between through and local trains in the manner indicated on the "entitled to" Table 5, but after a relative cost between local and through trains was ascertained, that relation was applied to the figures on Table 5, the "entitled to" table, to show the train movement cost of each class of business. It will be observed that Table 5 purports to cover the business of only two months, April and October 1907, only one of which, April, was included within the fiscal year on the business of which his detailed calculations and results are based.

The station abstracts referred to in the caption of the table do not furnish any of the information pur-

porting to be shown by the table, excepting alone commodities moved, weight thereof and points between which they moved. (See Exhibit 91 Johnson, Vol. 10 N. P. case.)

He made no attempt to ascertain how the business did in fact move, and it is admitted that it did not move as indicated on the table, and that as a practical matter it would be utterly impossible so to move it. It was his claim that it didn't make any difference how in fact the freight did move as between through and local trains or as to routing, but that the so-called "entitled to" movement was the basis for ascertaining what part of the total cost ought to be *charged* to the intrastate business, *but not what the actual cost of doing the intrastate business really was.*

(See p. 3522-3526, 3527, Vol. 7 N. P. case; also p. 3657-3666, Vol. 8 N. P. case.)

At page 3526 he testified:

> "Q. So then, as a matter of fact, this hypothetical table (meaning table 5) does not represent the service the stuff had, nor does not pretend to represent a service that would be the most economical, either as to the state or interstate, or the total?
>
> A. It doesn't represent the actual service and might not represent the most economical way of handling the freight.
>
> Q. If it happened to represent the most economical way, that would be merely a matter of chance, would it not?
>
> A. It would be a matter of very delicate adjustment of traffic, sir.
>
> Q. Nobody ever did operate a railroad that way that you know of, and you think it is likely that they never will, don't you?

A. I would not like to criticize the railroad operations as not being strictly in accordance to that known as ideal.

Q. My question related to this exhibit. In all your experience as a railroad man you have never known any railroad that could give the kind of service that you assumed was given there, have you?

A. I didn't assume that any service was given there, sir.

Q. Or that you assumed it was entitled to?

A. Entitled to, yes, sir. There is no such service.

Q. Never was, that you ever heard of?

A. I venture to say that there would be no such service on any road.

Q. Because it is impossible, isn't it, as a practical railroading matter?

A. It is considered so, yes, sir.

Q. And if undertaken it would greatly enhance the cost, wouldn't it,—enormously?

A. I coundn't say that. I have not examined upon that condition.

Q. Well, it might on given conditions?

A. It might under given conditions.

Q. It might, perhaps, under given conditions, double the total cost?

A. I couldn't say that at all; I haven't any idea."

It is clear that in his scheme of cost accounting, as attempted to be applied in these cases, he undertook to distinguish between what he called *"true cost,"* which was the amount he claimed ought to be *charged* against the business, as distinguished from the *actual cost* of doing the business. At page 3658, Vol. 8 N. P., he said:

"* * * Having established the cost of the movement on a through train and a local train

of a ton-mile, *the question then comes as to what the freight is entitled to,* to show what its *true cost* is, not the way that it may have been arbitrarily handled by the operating department; and therefore, I say that, having the through and local train cost per ton-mile, it should then be applied as the tonnage *should have moved* as shown upon Table No. 5. * * *"

Again, at page 3660:

"Q. Supposing the Railroad Company made a mistake in their arbitrary handling of the business and didn't haul as many intrastate ton-miles on through trains as you attribute to it (them) in this ideal non-discriminating table that you have made, your result then would be, other things being equal, just so far from the truth of the actual cost, would it not, and you would be treating the case not on what the cost was but what it ought to be?

A. That would be true, yes, sir; but I have a statement to make from that; it is that the way that you have suggested leaves it optional with the operating department to increase the cost of any class of freight that they may desire, inter and intra, which right, *for the purposes of this investigation,* I absolutely deny exists, and therefore insist that the use of Table No. 5 as shown in Division D (of his table 6) is absolutely justifiable and correct.

Q. In your answer when you used the words "this investigation" you meant this litigation, didn't you?

A. I did, yes, sir."

Further, he said, in substance, that the computation in rate litigation like this should be based not on what *was,* but upon the "entitled to" method shown by his Table 5. (p. 3661, Vol. 8 N. P.)

No claim was made that the freight in question was handled by the railroad company with any purpose other than the strictest economy of operation. (p. 3661.)

He said: (p. 3661, et seq.)

"Q. But the basis of division and the problem of division of cost are all found in Table 5, practically?

A. Practically, yes, sir.

Q. 91 per cent?

A. Yes, sir.

Q. That leaves it within the power of the tabulator in making his 'entitled-to' table to foreshadow exactly the result, does it not, in relation to it?

A. You mean by that that he could not—?

Q. I free you, as you do the Railroad Company; I don't say you, Mr. Hillman, but now we are speaking of the power, the man who makes the entitled-to table (which is the key of division of 91½ per cent,) has the power, being so minded, to foreshadow the result before he begins, by a system of percentages?

A. How am I to understand what you mean by 'foreshadow'?

Q. Control it.

A. To control it?

Q. Yes.

A. By manipulation in making up Table No. 5 and not putting it on the *actual basis*, he would have very great opportunities for controlling the final result.

Q. Yes, sir, and if he was wicked or biased and prejudiced or partisan, he could absolutely control this division, couldn't he, because there is the key to 91½ per cent of it?

A. Yes, sir."

He claimed that this "entitled to" table was made up

by taking the abstracts (more than 10,000 in all) of freight moved between stations, and assigning to it *through train service* on each whole operating division over which it passed, and local train service over the part or parts of the route less than an operating division. Through train service is, other things being equal, cheaper per ton per mile than local train service, but, as admitted by defendants, good and economical railroad operation often requires that through business move on local trains and that local business move on through trains. If, for example, there be not business enough offered at any given time to justify the running of a through train, the local train will do all the business, and if the volume of business of either class be more than the train or trains of that class can handle, the trains of the other class will take the overplus. It is abundantly shown by the testimony abstracted herein that regularity of volume of freight traffic offered to the carrier makes for lower cost, while spasmodic traffic greatly increases the cost. It follows then that the actual performance does not and cannot correspond with the ideal (or Hillman's "entitled to" movement) service, if any regard be had for cost.

It is admitted that if as a matter of fact the performance assumed on Table 5 is wrong or impossible with respect to through train service or local train service, then the result is worthless. (p. 3549, Vol. 7 N. P.)

In making the table he did not ascertain how many carloads there were or ought to be. (p. 3549.)

He did not ascertain the average loading per car of the interstate business or the intrastate business (p. 3550.)

He did not ascertain the relation of the carload to the dead weight of the cars necessary, or assumed to be necessary, to do the business. (p. 3552.)

He disregarded routing (p. 3589, Vol. 8 N. P.) (a most important matter on the line of the Great Northern, which has two routes through and across the State) and also the average haul and the classes of freight. (p. 3604, 3608, Vol. 8 N. P.)

He made no attempt to ascertain how much intrastate freight or interstate freight *did in fact move* on one or the other class of train. (p. 3618.)

He admitted that the companies did not render the service which he assumed in Table No. 5. (p. 3621.)

He did not attempt to ascertain and did not know whether the "entitled to" service would require any more or any less switching mileage than did the actual service, or any more cars. (p. 3621.)

He was not able to say whether it would have cost the Northern Pacific more or less to render the "entitled to" service, than it did to do the actual service. (p. 3622.)

He admitted that there was a great difference between the actual service referred to on Table No. 6 and the "entitled to" service set up on Table No. 5. (p. 3625 and 3626.)

He did not ascertain whether in fact the local trains which actually moved could have done the business attributed to them by his "entitled to" table. (p. 3627.)

He did not take into account the direction of the flow of traffic or the movement of empty cars. (p. 3634.)

He admitted that if the business were to be moved so as to divide the work between through and local trains on the basis of the "entitled to" table, a differ-

ent service to that referred to on his Table No. 6, by which he claims to show what the actual service was, would have been required, and that, therefore, a different cost or expenditure would have been required (p. 3638); and that if the relative amount was changed from a through train to a local train, or from a local train to a through train, it would of necessity change not only the tonnages but the operating expenses chargeable to each class of train. (p. 3639.)

It is apparent, therefore, that the relation of cost of freight movement on local trains to that on through trains would be changed, and it is this relation that is applied by him to the ideal movement set up on Table No. 5.

He admitted that the direction of the flow of the greater amount of traffic was very important (p. 3639-3640) and that the greater the volume of through business done in local trains the lower the average cost per ton per mile on such trains, and that the greater the volume of local business done in through trains the higher the cost per ton per mile on trains of that class, and that the tendency of the doing of one class of business on the trains of the other class would be to bring the cost of the two nearer together (3641). But he made no attempt to ascertain how much business of either class was in fact done on trains of the other class.

He assumed that the average length of haul in the State of the intrastate business was the same as like haul *in the State* of interstate business, and his computations are based upon that assumption, while it appears that the average haul of the intrastate class business was 87 miles and the average haul *in Minne-*

sota of the corresponding interstate business was 139 miles. (p. 3654-3655.)

It is shown by complainants' evidence, abstracted herein, that the intrastate business has an average haul on these roads of a little more than 100 miles, while the average haul of the interstate business touching Minnesota is four or five times as great. (See Exhibit 80 Elliott, Vol. 10 N. P., Exhibit 53 Ward, Vol. 6 G. N.), and that the carloading and the trainloading of the short haul business is much lighter than that of the long haul business.

He said: (p. 3600)

> "Q. Now, your computations are made upon the theory that all those ton-miles are homogeneous and that the interstate business included therein moved on the same car-loading, moved the same distance, moved on the same rates, and was the same kind of stuff as the state business therein; am I right?
>
> A. Yes, sir.
>
> Q. And if you are wrong in any one of those particulars, then an error has crept in by reason of our unjustified assumption; am I right again?
>
> A. You are right."

In fact there was nothing to support any of the assumptions referred to.

Hillman's Table No. 6, Exhibit 3-M Hillman, Vol. 9, N. P. Case.

This table was devised for the purpose of showing:

(1) The relation of cost per ton per mile for train movement on local trains to that on through trains.

(2) The relation of train movement cost of the intrastate business to that of the interstate business.

In Division C of the Table, the conclusion is reached that "local train work costs 80% more than through *same ton efficiency.*" The complainants' testimony abstracted in this brief shows that in fact the local trains do not have the *"same ton efficiency."* It is admitted that this figure is the result of an error, and that according to Mr. Hillman's own calculations 80% should be increased to 113%. (See p. 4154-5, Vol. 8 N. P.) This figure becomes a factor in subsequent calculations, and the final result is based upon the erroneous factor. The calculations have never been corrected to show what the result would be if 2.13 had been used instead of 1.80.

For convenient reference, Table No. 6 is here reproduced.

Division A of the table purports to show by railway operating divisions the net ton *miles*, dead ton *miles* and total ton miles performed in April and October 1907 (April only being in the fiscal year ended June 30, 1907,) on through and local trains respectively, and the percentage of each to the total. These figures were compiled from certain reports made by each railway train conductor on his departure from the initial point of his run, indicating his estimate of the number of "gross tons," which includes the weight of the cars, and their contents if loaded, and also his estimate of the weight of the contents. Mr. Hillman then ascertained the length of the division over which the train moved, and multiplied the number of gross tons, including cars and contents, by the length of the division to secure the total ton miles, and in like manner multiplied the net tons and the dead tons respectively by the length of the division to ascertain the net ton miles and the dead ton miles respectively. He, therefore, assumed in his computations that the train picked up no cars or freight and put off no cars or freight at any points intermediate between division termini. Both assumptions are false, and it was Mr. Hillman's theory that one corrected the other, because, he said, an east-bound train would pick up as many cars and as much freight en route as a west-bound train would put off, and vice versa. (p. 3616-3618, 3627, Vol. 8 N. P.)

He assumed that the conductors' estimates were right, when, as a matter of fact, no revenue whatever depends upon such estimates, and the purpose is to show, in a general way, whether the engine has a load according to its rating. (p. 3629.) By such informa-

tion, the operating department can ascertain whether the regular trains are sufficient to move the business or whether "extra trains" are needed. Admittedly the company freight, which is not revenue freight, is moved by these trains. This freight consists largely of coal, track and building material. It is of the lowest classes, and necessarily moves under conditions producing a low cost. About 20 per cent of all of the ton miles on the Northern Pacific is such company freight. It is for distribution at various points along the line where needed. Economical railroad operation requires that it be hauled on occasions when other loading is light. Naturally, most of such business would be done on local trains, and, dividing the local train cost by its ton miles would produce a lower result than if the non-revenue company freight be not included, thus making the relation of ton mile cost on local trains to that on through trains lower than it otherwise would be.

The assumption that the tonnage east on each train remained uniform from the initial point, and that the tonnage west on each train remained uniform from the initial point, or, if neither be true, that one picked up cars and freight to the same extent that the other put them off (p. 3631) is wholly without justification in the light of the facts, because, as shown by Mr. Johnson in his testimony (p. 4224 et seq.), freight does not move in equal volume in each direction over the lines. There is usually considerably more east-bound than west-bound freight. The relation of movement, however, is not constant in either direction. At some times of the year the west-bound will be a good deal larger than the east-bound. At others, the con-

trary will be the case. But taking the year through, there is considerably more east-bound than west-bound, about one-fourth more on the average. The result necessarily follows that there is about one-fourth more empty car movement westerly than there is easterly. The fuel, material and supplies needed by the company for the operation and maintenance of its road moves, as a rule in Minnesota, from eastern terminals westerly to the points where needed.

That these incorrect assumptions would change Mr. Hillman's results appears to be fairly admitted by him in cross-examination at p. 3632-3637, Vol. 8 N. P.

An examination of Division A of the Table itself persuasively indicates that it is wrong. It appears that, in round figures, the total through train ton miles are 460 millions, including 260 millions net ton miles, the relation of net ton miles to total ton miles being about as 100 is to 175. The corresponding relation of net ton miles to total ton miles on local trains is about as 100 is to 188.

The intrastate class business, as before shown, has an average haul of only 87 miles. It includes all of the less-than-carload shipment. The proof, hereinbefore abstracted, is that the loading of such cars is about five tons per car, while the loading of through freight is six or seven times as much. Therefore, the local trains doing business between divisional termini necessarily haul by far the larger part of the light loads. But the relation of net ton miles to total ton miles in through and local trains, respectively, indicated in Division A of Table 6, are substantially the same.

Division B.

In this division the total ton miles are shown, and also the main line ton miles and the branch line ton miles.

The ton miles as claimed by him on the main line and on the branches and the total of both are respectively divided into operating expenses included in items 10 to 27 of the classification of accounts, which shows that for train movement it costs 61 per cent more per ton per mile on the branches than on the main line. (.21420 cent divided by .13277 cent).

It is then *assumed* that the cost per ton per mile for the train movement items 10 to 27 on the branch lines is exactly the same as like cost on local trains on the main line, and upon that assumption the results shown in Division C are worked out.

Division C.

By this division of the table, he claims it is shown that per ton per mile the local train work movement costs 80 per cent more than the through. (This should be 113 per cent.) (p. 4155.)

The computations in this division all depend upon the figures in Division A and in Division B, and upon an assumption that in the months of April and October, 1907, the same percentage, 14.59, of net ton miles was performed by local trains as was performed in the whole year, ended June 30, 1907.

But by Table No. 5, the "entitled to" table, it appears that, in round figures, 188 million ton miles were attributed to through trains, while Division A of Table 6 purports to show that through trains on the main line alone moved, in round figures, 260 million ton

miles, about 35 per cent more. It was Mr. Hillman's claim that in making his table 5 he attributed that part of the route of each shipment which included the whole length of any operating division to through trains. This would assign to such trains *the highest possible number of ton miles.* But it appears by table 6 that through trains actually produced about 35 per cent more ton miles on main line alone than there were produced within the State, according to table 5. Therefore one table or the other is wrong.

Division D.

In this division the ton miles on through trains and on local trains, intrastate and interstate, as shown on Table 5, the "entitled to" table, are used and the relation of ton mile cost on through trains to that on local trains, (ascertained in Division C to be as 100 is to 185 instead of as 100 is to 213) was applied to equate such ton mileage, and to ascertain the relation of cost per ton per mile interstate to intrastate. This relation is shown to be as 100 is to 123. (But this is erroneous on account of the mistake above mentioned and because the number of ton miles attributed to main line through trains in division A of table 6 is wrong.)

This relation of 100 for interstate to 123.27 for intrastate is used in the subsequent calculations to divide the operating expenses under items 10 to 27 between the interstate and intrastate business, as appears on Table 7 of the same exhibit. Necessarily the results depending thereon are wrong.

Mr. Hillman assumed in all these cases that train movement cost on certain parts of each system selected by him was the same as train movement ton mile cost of local freight trains on the other parts of the system.

The train movement items referred to are:

11. Freight conductors.
13. Freight brakeman.
16. Freight train supplies and expenses.
18. Heating and lighting cars.
19. Oiling cars.
21. Engineers and firemen.
22. Engine dispatchers, wipers and roundhouse laborers.
23. Fuel for locomotives.
24. Oil, tallow and waste for locomotives.
25. Other locomotive supplies.
26. Water supply.

In the Northern Pacific case he assumed that the per ton per mile cost for these items on the *branch lines on all trains* was the same as like cost *on local trains on the main lines.* (See Table 6, Ex. 3-N, Vol. 9 N. P. case.)

In the Great Northern case he assumed that such per ton per mile train movement cost on all parts of the system having *"local service only"* was the same as like cost on the local trains on all parts of the system having *"through and local service."* (See Table 6, Ex. G, Vol. 5 G. N. case.)

In the Minneapolis & St. Louis case the assumption was made on basis similar to that in the Great Northern case. (See Table 6, Ex. L, Vol. 5 Minneapolis & St. Louis case.)

Frequently in his testimony in the Northern Pacific case he justified the assumption there made by certain

testimony of Howard Elliott, President of the Northern Pacific road, given in cross-examination. (p. 3183 et seq, Vol. 7 N. P. case.)

In direct examination, Mr. Elliott had testified as hereinbefore indicated, that the cost of doing the intrastate business per ton per mile was from three to six or seven times as much as that of the interstate business. (See pp. 3197, 3198 and testimony of Mr. Elliott hereinbefore abstracted.)

The testimony referred to by Mr. Hillman in support of his assumption in the Northern Pacific case is as follows:

"Q. Is there anything in the character of the Northern Pacific road which makes it more expensive to transport freight upon the main line of the road than upon that branch? (Meaning the branch from Little Falls to Morris.)

A. No, sir.

Q. Is it not true, as you stated in your examination last week, that the highest relative expense is found upon the branches?

A. That is right.

Q. Now, if you would take all of your branches in the state of Minnesota, or all of your branches which touch the operating divisions in the state of Minnesota, and ascertain that all of the freight carried upon those branches is local freight, and ascertain the total cost of transporting it, would you not have arrived at the very highest cost of transporting local freight in the state of Minnesota?

A. You probably would have, yes, sir.

Q. And if you applied that cost to the **total local** freight in the state of Minnesota which was intrastate, **you would find the total cost of moving** that number of tons of intrastate freight, would you not?

A. If it was all intrastate freight.
Q. Yes, that you applied it to.
A. Well, I don't know how you are going to separate the inter from the intra."

It further appeared from his examination that no separation of the intrastate freight from interstate freight on branch lines had been made.

There was no ascertainment in the case that all of the freight carried upon the Northern Pacific branches is local freight.

At page 3189 he said:

> "Well, my judgment, Mr. O'Brien, is that, when you take all the conditions, as I tried to outline them yesterday, and consider the fact that our state business, as a whole, is relatively a short-haul business and that our interstate business, as a whole, is relatively long-haul business, it costs more to do the state business than the interstate; I did not undertake to make a computation of *each train* or *each class of trains;* I gave you the benefit of the best judgment that I had."

Mr. Hillman's calculations in these cases, so far as the division of the train movement cost is concerned, rests upon the assumption that such cost per ton per mile on the Northern Pacific branches is the same as like cost per ton per mile on the local trains of its main lines, and in the Great Northern case and in the Minneapolis & St. Louis case, upon the assumption that the train movement cost on the parts of each system having "local service only," is the same as like cost upon the *local trains* on the parts of the system having "through and local service," and reliance is had upon

the testimony of Mr. Elliott, above quoted, to support that assumption.

It is submitted that neither the subject matter under consideration when he testified, the context or the language of his testimony justifies an inference that he intended thereby only to include the **eleven items** in the conducting transportation account, above mentioned, out of a total of some **ninety-five items, constituting total cost,** and it appears that the cross-examiner understood Mr. Elliott to refer to "total cost" because he used that phrase in the very next question asked.

There is certainly no justification in his testimony for the corresponding assumptions made in the Great Northern case and in the Minneapolis & St. Louis case.

It is undoubtedly true that branch line cost is higher than main line cost, but Mr. Elliott did not in his testimony compare branch line cost with any *main line local train cost.*

The branch lines of railway in Minnesota were built to reach certain heavy tonnage either grain or products of the forest. The low class tonnage necessarily predominates upon such branches and business thereon is not at all comparable to the less than carload lot business, peddled along the main line by local trains. The principle cities of the state are upon the main line to and from which necessarily the high class merchandise business moves in relatively large volume.

Mr. Hillman's use of Mr. Elliott's testimony was unjustified and improper.

He construed it to apply to certain items selected by him.

His Table 5 of Exhibit 3-M, as heretofore shown, contains no element of truth with respect to the class of trains by which ton miles, interstate or intrastate, were produced.

The ton miles thereon shown do not correspond in any way, as respects the service producing them, with the ton miles appearing in Division A of Table 6, by use of which he ascertained the relation of train movement cost per ton per mile, produced by local trains to like cost per ton per mile produced by through trains. Tables 5 and 6 covered the same period of time and yet Table 5 attributes 45,470,933 ton miles of *interstate business alone* to local trains, whereas Division A of Table 6 purports to show only 44,851,091 ton miles, *including both interstate and intrastate*, while table 6 appears to show that main line through trains produced about 35 per cent more through ton miles than could possibly be produced on the system in Minnesota according to table 5. The ton miles on Table 6 relate only to main line and also include ton miles of company material not included in Table 5.

Beyond doubt assumptions such as he made, coupled with arithmetical factors such as he used can be made to produce any result desired.

Mr. Hillman's own figures show that his conclusions are wrong.

If Mr. Hillman had selected only those parts of the Great Northern system which are in fact branch lines he would have shown by his calculations a much higher cost of intrastate business over interstate business and probably higher than that found by the Master. His Table 6 (Exhibit G, Vol. 5 G. N. case) furnishes data by which to compare the train service cost per ton per mile on branches compared with like cost on the main line with which the branches connect. Calculated on the data contained in the exhibit, it appears that the train service cost per ton per mile on the main line and on the branches connecting with the same are as follows:

Main Line.	Cents.	Branch Lines.	Cents.
Willmar	0.103	Hutchinson	0.550
		Browns Valley	0.305
Fergus Falls	0.147	Pelican Rapids	1.281
Fosston	0.094	St. Hilaire	0.717

It is plain that if there be included with such branches, parts of main line—or, indeed, other branches having heavier volumes of business—the average train movement cost per ton per mile would be greatly reduced. In other words, by the arbitrary selection of different parts of the system the average train movement cost on certain portions could be made to approach that on other portions. The above mentioned branches are the only portions of the Great Northern which are not connected at both ends with other parts of the system.

The details of the calculations above referred to are indicated on the following table:

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CALCULATED FROM DATA APPEARING ON
HILLMAN'S EXHIBIT "G."
VOL. 5, G. N. CASE

	On Basis of Ton Miles.					
	Ton Miles	Train Service Cost	Average Cost (Cents)	Ton Miles	Train Service Cost	Average Cost (Cents)
Willmar Main Line				473,019,090	$486,196.08	.103
Hutchinson Branch	1,292,067	$7,100.42	.550			
Browns Valley Branch	2,868,235	8,744.42	.305			
Fergus Falls Main Line				144,030,215	211,976.92	.147
Pelican Rapids Branch	495,991	6,354.98	1.281			
Fosston Line				167,432,292	156,906.72	.094
St. Hilaire Branch	2,148,464	15,407.78	.717			

Note.—Cost of Train Service includes accounts 84 to 91 shown in Hillman's Exhibit "G" Table No. 1 and covers Road Engine and Road Train expense only and consists of the following accounts:

No. 84. Road Enginemen.
No. 85. Engine House Expenses—Road.
No. 86. Fuel for Road Locomotives.
No. 87. Water for Road Locomotives.
No. 88. Lubricants for Road Locomotives.
No. 89. Other Supplies for Road Locomotives.
No. 90. Road Trainmen.
No. 91. Train Supplies and Expenses.

Above comparison is for strictly Branch Lines and Main Lines with which they connect, located wholly within the state of Minnesota. Other lines shown as Branch Lines in Hillman's Exhibit "G," Table No. 6, are not strictly Branch Lines in that they are connected at both ends and are used to a greater or less extent for through business, excepting Benson Line which is only partly in Minnesota.

The foregoing is sufficient to show that the selection of certain portions of the system in each case as a criterion of the train service ton mile cost for local trains on the other parts of the system introduces another element of conjecture into the scheme of calculations and that the result may be controlled thereby.

Hillman's Division of Total Freight Operating Expenses, Other Than Train Movement Expenses, Between the Intrastate Business and Interstate Business, Table 7, 3-M Hillman, Vol. 9 N. P. Case.

All freight operating expenses are common between the intrastate business and the interstate business. The traffic moves on the same trains and the same cars and is handled by the same men.

The "entitled to" Table No. 5, heretofore referred to, is the key by which Mr. Hillman effected the division of more than 91 per cent of the expenses between the two classes of business. Eleven items, included between items 10 to 27, of Table 7, were divided on the basis referred to in Table No. 6, and therefore such divisions depend on the assumptions on which Table 5 was made. By reason of the mistake in calculations, before referred to, $51,173.05 was charged to the interstate business which should have been charged to the intrastate business. (p. 4155, Vol. 8 N. P.)

We invite attention to his method of division of some of the remaining principal items.

Item 5, switchmen and watchmen, amounts in the aggregate to $397,201.20. He assigned 27.58 per cent of that amount, or $109,548.09 to the intrastate busi-

No. 88. Lubricants for Road Locomotives.
No. 89. Other Supplies for Road Locomotives.
for through business, excepting Benson Line which is only partly in Minnesota.

ness. The percentage was arrived at by equalizing the carload and less than carload lot tons, intrastate and interstate, by multiplying the less than carload tons by seven. Then he added the less than carload lot tons so increased to the carload lot tons of each class, and divided the total amount on the relation of the number of equalized tons of each class to the number of equalized tons of both classes. He arrived at the carload tons and less than carload tons from his "entitled to" table, but, as before shown, he never ascertained the number of cars of either class or of the total of both classes, but assumed equal carloading for the short haul and for the long haul business, and also assumed that each interstate car (the average haul being four or five times as much as the intrastate) received the same amount of switching service as did the short haul intrastate business. It is to be borne in mind that interstate business received but one terminal switching service in the State, while the intrastate business received two.

He admitted, at page 4042, Vol. 8 N. P., that his division was wrong. We have calculated what the right result would be if two terminal services had been charged to the intrastate business and one to the interstate business and find that 43.2 per cent of the total item would have been assigned to the intrastate business, and 56.8 per cent to the interstate business, thereby increasing the charge over that stated by him $62,042.83.

Item 9, proportion of operating expenses of terminals, amounts in the aggregate to $115,519.13. The services covered by the expenses included in this item embrace exactly the same services as are included in

Item 2, station agents, clerks and laborers, and *Item 5, switchmen and watchmen, taken together.* It follows that any division of Item 9 between the intrastate and interstate business must necessarily assign to the intrastate business a percentage not higher than the intrastate percentage of one of the two items, or lower than the intrastate percentage of the other.

But he assigned only 13.79 per cent of Item 9 to intrastate business, whereas he assigned 27.58 per cent of Item 5, and 37.86 per cent of Item 2 to the intrastate business. And the division of Item 5 has been shown by his own testimony to assign too little to the intrastate business.

If the average of his own divisions of items 2 and 5 were taken for the division of Item 9, the intrastate charge would be 32.72 per cent, or $21,867.77 more than he charged thereto.

Item 33, car mileage-balance, and *Item 45, repairs of freight cars,* were divided by him by assigning 18.16 per cent of each to the intrastate business. This division was made on the basis of ton miles, equalizing the less than carload ton miles including interstate and intrastate by multiplying by seven. (p. 3385, et seq., Vol. 7, p. 4067 et seq. Vol. 8 N. P.) This division is manifestly unfair, because, as clearly shown by the testimony of Mr. Elliott, herein abstracted, damage to cars results, in a large measure, from switching, loading and unloading. The cars handling the intrastate business are loaded and unloaded, on the average, four or five times as often as the cars handling the interstate business, and are twice switched in Minnesota at terminals for loading and unloading, whereas the cars handling the inter-

state business are switched at terminals only once in Minnesota. It therefore follows that terminal switching, loading and unloading in Minnesota of the intrastate business is eight or ten times as much, in proportion to ton miles, as that of the interstate business. These facts were not taken into consideration at all by his method of division. Item 5, switchmen, etc., was divided by him so as to assign 27.58 per cent to the intrastate business, or 9.42 per cent more than he assigned to intrastate business of the expenses covered by Item 33, rentals of cars-balance, and Item 45, repairs of freight cars. If these items had been divided on the same basis as switching (and as shown his division assigned too little to the intrastate business) the additional charge to the intrastate business would be $72,912.45.

Item 47, repairs of locomotives, amounted in the aggregate to $312,764.94. He ascertained that 18.1 per cent of such total was expended for the repairs of switch engines, and 81.9 per cent for the repairs of road engines. He divided the switch engine repairs on the basis of tons handled, thereby assigning to intrastate business 22.684 per cent. He divided the repairs of road engines on the ton mileage basis, with a result that, of the *whole account,* he assigned to intrastate business only 17.52 per cent. (p. 3386. Vol. 7, p. 4071 et seq. Vol. 8 N. P.)

It is clearly established by the evidence that the carloading of the intrastate business of relative short haul is lighter than the carloading of the interstate business of the much longer haul. Tons are switched only in cars. The expense is the same whether the car has a heavy load or a light load. It seems clear that

his failure to take that fact into account resulted in a division unfair to the intrastate business.

Again, it would seem that repairs of switch engines ought to be divided as the cost of switching, Item 5, and he assigned 27.58 per cent of that item to the intrastate business.

The balance of the item, 81.9 per cent thereof, the repairs of road engines, was divided by him on the basis of his division of the train movement items, 10 to 27, (basis shown in Table 6), thereby assigning 17.666 per cent to the intrastate business. (p. 3833, Vol. 8 N. P.) But it is admitted that a mistake was made on Table 6, and if that mistake be eliminated, his own basis would assign 20.2 per cent to the intrastate business.

That his conclusion that only 17.52 per cent of the total expense for repairs of locomotives should be charged to the intrastate business is wrong, is clearly shown by comparing it with the division of switching cost, of which he assigned 27.58 per cent, and with train movement cost, of which, on the correct basis, he assigned 20.2 per cent. The engines are used in switching and in train movement. The cost of *repairing* the engines charged to the intrastate business ought not to be less than the proportion of expense of *using* the engines in doing the business.

We invite the Court's attention to his explanation of the division of Item 47, appearing at page 4071 et seq., Vol. 8 N. P., in which it appears that by his methods, *the wages of the switchman following the switch engine was divided between the two classes of business on one basis, and the wages of the engineer and fireman on the switch engine on another basis.*

There is no reason for this.

Hillman's Division of the Maintenance of Way and Structures General Account.

It will be remembered that by his Table 4, the division of practically all of the items of this general account, 56 to 74, was made by first dividing the total of each item on the basis of the *cause* of the repair or renewal, assigning a certain portion of each item to "weather stress" and a certain other portion to "wear and tear." The weather stress items were divided on a revenue basis—so-called "net earnings"; that is to say, the gross earnings from which a part of the expenses were deducted. The wear and tear portion of each item was divided on the basis of train weights, ignoring all elements of speed, etc. Elaborate defense of the necessity of taking into account the *cause* of the repair or renewal—that is, whether due to weather or to wear—was made by him in support of that division, to which attention has heretofore been called.

But, when he came to divide the freight proportion of the same class of expenses for maintenance of way and structures between the intrastate business and the interstate business, he recognized no necessity for taking into account the *cause* of the repair or renewal, weather stress, as distinguished from wear and tear. On cross-examination he admitted that if in this division he had followed the same theory that he did in the division between freight and passenger, the result would have been a higher charge to the intrastate business.

He said: (p. 4076, Vol. 8 N. P.)

"Q. By ignoring weather-stress as the necessity of any of these expenditures, a less sum is

attributed to intrastate cost than otherwise would have been, if you had taken revenue as the basis of your weather-stress items division?

A. Yes, sir."

A consideration of the basis which he did use suggests that he departed from his theory, *in order to charge less to the intrastate business.*

The first item in the general account for the maintenance of way and structures is *Item 56, removal of snow and ice.* It aggregates only $65,885.92. This expenditure is incurred in a few weeks in the winter months, depends wholly upon weather conditions and would appear to be almost in a class by itself. Yet the basis for a division of that item was found by Mr. Hillman and then applied to practically all the other items in this great general account.

Let us examine the basis. He found that of the total amount expended for the repairs of locomotives, 18.1 per cent was expended for the repairs of switch engines, and the balance for the repairs of road engines. For the division of the cost of removing snow and ice he said:

> "Here we again make the distinction between switching movement and the revenue train movement." (p. 3387, Vol. 7 N. P.)

and then divided the cost of removing snow and ice into two parts, of 18.1 per cent and 81.9 per cent respectively. The first part he divided on the basis of the division of the cost of repairing switch engines, which was the tons handled basis, thereby assigning 22.684 per cent to intrastate. The other part, 81.9 per cent, he divided on the basis of the repairs of road

engines, which was ton mile basis, and assigned 14.826 per cent to the intrastate business.

The result was that he assigned 16.248 per cent of the whole item to the intrastate business, and 83.752 per cent to the interstate business.

The percentages arrived at for the division of the expense of removing snow and ice 16.248% intrastate and 83.752% interstate were applied to the following items:

56, removal of snow and ice,
57, repairs of roadway and track,
60, repairs of bridges and culverts,
61, cattle guards, road crossings and track signs,
62, renewals of rails,
63, renewals of ties,
64, renewals of fastenings,
65, renewals of frogs, switches and miscellaneous track material,
67, repairs of fences,
68, repairs of snow fences and snow sheds.

Inasmuch as it clearly appears that his division of Item 47, repairs of locomotives, *even on his own theory,* assigned too little to the intrastate business, it therefore follows that these items, which were divided on the same basis, were erroneously divided, to the disadvantage of the intrastate.

His method therefore amounts to this: to divide the freight proportion of the cost of maintenance of road and structures between the intrastate and interstate freight business, (1) ascertain proportion of cost of repairing switch engines to the total cost of repairing all engines, (2) take that proportion of each such item of cost of maintenance and divide it on the ton mile basis, equated between carload and

less than car load business by multiplying the latter by seven, and (3) divide the balance of each such item on the ton mile basis.

No reason supports the scheme. It is arbitrary. The result is about the same as if the "straight" ton mile basis had been used. The difference is less than two per cent. The testimony elsewhere herein abstracted shows why the ton mile basis is wrong.

Item 69, repairs of buildings, was divided on the same basis as the items in the general expense account, items 83 to 95.

83, salaries and expenses of general officers,
84, salaries of clerks,
85, general office expenses,
86, legal expenses,
87, rents of buildings, tracks, yards and terminals,
88, insurance,
92, stationery and printing (D and E),
94, New York office,
95, miscellaneous,

were divided on the basis of the aggregate amounts assigned to the intrastate and interstate business, respectively, of all preceding items, assigning 20.05 per cent to the intrastate business, and 79.95 per cent to the interstate.

It is clear that the divisions of the group of items last mentioned, assigned too little to the intrastate business, because the preceding divisions have been shown to be unfair to the intrastate business. We have not calculated how much, on his own basis, in the division of the last group of items in the general expenses general account, should be added to the intrastate expenses.

From the foregoing, it appears that there should be added to the intrastate expenses at least the following amounts:

(1) Items 10 to 27, train movement	$51,173.05
(2) Item 5, switching, etc.	62,042.83
(3) Item 9, operating terminals	21,867.77
(4) Items 33 and 45, car mileage and car repairs	72,912.45
Making a total of	$207,996.10

Table 9 purports to show the relation of cost per ton per mile of the intrastate business to the interstate business (division A thereof), 143.91 to 100. If $207,996.10, last above mentioned, be subtracted from the interstate expenses shown thereon and added to the intrastate expenses shown thereon, such relation would be as 177 is to 100.

It appears, by Exhibit 80 Elliott, Vol. 10, N. P. case, that the relation per ton per mile of the intrastate business to the interstate business *in 1908* was as 144 is to 100. *It follows, therefore, that on Mr. Hillman's own table and exhibit and admissions, it costs the Northern Pacific much more to earn a dollar in the intrastate business freight than in the interstate business.*

It is conceded by defendants that it costs more to earn a dollar in the intrastate passenger business than in the interstate passenger business. The rate of return from all business in the state is not excessive, and it therefore follows that the rates complained of are confiscatory, even on defendant's own showing, if any reasonable valuation of the property be made.

Mr. Hillman's Division of the Total Passenger Operating Expenses Between the Intrastate Business and the Interstate Business, Table 11, Exhibit 3-M, Vol. 9 N. P. Case.

Inasmuch as Mr. Hillman, by his Table 13 of the same exhibit, shows that the relative cost per passenger per mile of the intrastate business to that of the interstate business is as 111.19 is to 100, and the Master determined that such relation is as 115 is to 100 (Table at p. 264, Vol. 1 N. P. case), a review of the details of his division of passenger operating expenses between the two classes of business is not necessary. His explanation, in direct examination, of that division will be found at p. 3412, et seq., Vol. 7 N. P. case. It appears from his own testimony that he has but little confidence in the methods employed to show the result on the table.

It is interesting to note that the items included in the general account of expenses for maintenance of way and structures are divided on the basis of revenue—*a so-called net revenue*. (p. 3421, 3422, Vol. 7 N. P.). He does not, however, take into account weather stress, or make any division of the items with reference to the *causes* making necessary the expenditures for repairs and renewals, as he did in the division of the same class of expenses between the freight and passenger departments.

This is confirmatory of our suggestion that his methods were selected to produce the result desired.

In his first division of this class of expenses, he insisted that it was necessary that a portion of each item, arbitrarily assigned to weather stress as the cause of

the expenditure, should be divided on the basis of revenue.

In his next division of the same class of expenses, namely, between the intrastate freight and the interstate freight, he failed to employ revenue as an element in any of the divisions of this class of expenses, because the revenue per ton per mile of the intrastate business was higher than the like revenue of the interstate business, and, if revenue had been employed as a basis of division, more would have been assigned to the intrastate business, as he admitted.

In the third division of this class of expenses, namely between the intrastate and interstate passenger business, neglecting the weather-stress theory, he adopted revenue—a so-called net revenue—as his divisor. But in the passenger business, the revenue per passenger per mile of the intrastate business is substantially the same as the revenue per passenger per mile of the interstate business, and in this instance revenue could be used as a divisor without increasing the intrastate charge.

Again, there is no rational explanation for a different divisor of this class of expenses between the intrastate and interstate freight business to that employed for like division between the intrastate and interstate passenger business. While making this division in the freight department, the division theretofore made of Item 47, repairs of locomotives, was adopted as the divisor of the expenses of removing snow and ice, Item 56, and the percentages there found were applied to all this class of expenses in the freight department.

If the basis employed for the dividing of repairs of locomotives in the freight department, between the intrastate and interstate business, is right, it is also right in the passenger department.

An examination of the details of his method from beginning to end discloses that he frequently and without reason shifted from one basis to another for the different divisions of the same class of expenses. It also appears that each principal operation employed for these divisions, namely, Table 4 for the division between freight and passenger, Table 7 (in connection with Tables 5 and 6) for the division between the intrastate and interstate freight, and Table 11 for the division between intrastate passenger and interstate passenger, were all made without any definitely known element or factor employed therefor; that Table 5, the "entitled to" table, is arbitrary and fictitious; that Table 6 is based upon unjustified assumptions, and that a comparison of the two tables conclusively shows that one or the other is wrong.

It follows that there is no foundation in fact or theory for his scheme.

Net Earnings As Shown by Hillman Applied to Valuation.

The Master assigned to the Minnesota intrastate business, freight and passenger, $19,026,619, the total valuation. By Exhibit 3 L, Vol. 9 N. P. case, Hillman shows that the net intrastate earnings of the company in Minnesota amounted to $1,117,460.85. If there be subtracted from that sum $207,996.10, the amount which should be added to the intrastate freight operating expenses, as divided by Hillman, as heretofore shown, there would remain $909,464.75, or sufficient to pay 4.78 per cent on such valuation.

On Exhibit 3 L, Hillman assigns $94,435.67, taken from his Table 16, 3 M, derived from investments in non-railroad property, to intrastate earnings. It is clear, we think, that this should be excluded.

$909,464.75 less $94,435.67 equals $915,029.08, the intrastate freight and passenger net earnings according to the defendants' expert, Hillman. $71,079,780.98 is Minnesota valuation according to defendants' engineer Morgan. Defendants conceded before the Master that 24 per cent of total Minnesota value might properly be assigned to the intrastate business, but the Master assigned only 21 per cent to the intrastate business (see table of results, p. 264, Vol. 1 N. P. case). 21 per cent of $71,079,780.98, state engineer's value, equals $14,926,754, which divided into above net earnings, $915,029.08, produces less than seven per cent, viz., 6.1 per cent, return.

It therefore appears that rates complained of are confiscatory on the Northern Pacific on defendants' own proof.

Mr. Hillman's Work and Testimony in the Great Northern Case.

Defendants' Exhibit G Hillman, Vol. 5 G. N. case, corresponds with defendants' Exhibit 3-M Hillman in the Northern Pacific case, which has heretofore been discussed in detail. He employed the same methods in both cases.

Table 5 of Exhibit G is the "entitled to" table in this case corresponding with Table 5 of Exhibit 3-M in the Northern Pacific case.

It is not claimed that the business in fact moved as indicated by the table, or that from the standpoint of practical and economical railroad operation it ought to have so moved. But it is claimed by Hillman that the table furnishes the data and is a key for the division of freight operating expenses between the intrastate business and interstate business, and that such division shows, *not what it actually did cost to move the intrastate business, but the amount of the total cost with which such business is "entitled to" be charged.*

The table is based on the business of October 1907 and April 1908, and purports to divide or classify the same:

(a) Between carload and less than carload business;

(b) Between tons, intrastate and interstate, moved on through trains, on local trains and on all trains, respectively.

(c) Between ton miles, intrastate and interstate, produced by through trains, local trains and all trains, respectively.

The table also purports to show the number of intrastate and interstate *tons* "entitled to" be moved on

through and local trains, respectively. It assigns to through trains each whole operating division included in the route of any shipment, and this, without regard to the class of train which did actually move it. The train movement cost per ton per mile on through trains is less than on local trains. The table attributes the highest possible number of intrastate tons and ton miles to the through trains, and, therefore, the lowest possible cost is assigned to such business, without regard to the actual fact. It is, as heretofore pointed out, conceded that no railroad company ever did operate its road in accordance with any such scheme as that upon which Table 5 is constructed, and that it is likely that no railroad company ever will so operate its road.

It is also conceded that practically all of the tons of intrastate freight must be handled, in part at least, on the expensive local trains, and that practically all of the interstate business may be so handled on through trains. An inspection of Table 5 shows that the total intrastate carload tons taken into account by Mr. Hillman were 259,127, and that 249,451 thereof were assigned to local trains; that the total intrastate less than carload tons were 28,508, and that 26,330 thereof were assigned to local trains. It also appears that the total interstate carload tons were 2,536,462, and that 2,435,070 were assigned to through trains, and that the total interstate less than carload tons were 48,664, of which 39,822 were assigned to through trains.

By his Table 6, he claims to show for the same months, October 1907 and April 1908, the actual number of through train ton miles and the actual number of local train ton miles, but his "entitled to" table does

not even substantially correspond with it. One table or the other is wrong.

For example, by Table 5 he assigns to through trains 348,299,776 interstate ton miles and 15,913,247 intrastate ton miles, making a total of all ton miles on through trains of 364,213,023, whereas it appears by Table 6 that there were 379,052,221 through train ton miles, or 14,839,198 ton miles in excess of the highest possible number that could be attributed to through trains. It also appears that by Table 5 he *assigned* to local trains 34,780,216 interstate ton miles and 14,942,011 intrastate ton miles, making a total of 49,722,227, and by Table 6 it appears that 75,195,685 ton miles *were produced* by local trains, or 25,473,458 ton miles more than was assigned to such trains by Table 5. Table 6 also shows more than 40,000,000 total ton miles of all classes in excess of the total number shown on Table 5, and both are based upon the business of October 1907 and April 1908.

No records have ever been kept by the Great Northern Company or any railway company which furnish the information purporting to be shown on Table 5, and, inasmuch as Mr. Hillman claims to have compiled it from certain station abstracts and from 750,000 waybills (see testimony, p. 1506-7, 1515, Vol. 3 G. N. case), it is, of course, impossible to review his work to ascertain what the waybills do in fact show. It is conceded that no division of the business can accurately be made between intrastate and interstate from information furnished by the station abstracts, of which Exhibit 58 Parker, Vol. 6 G. N. case, is a specimen. It is also conceded that the form of waybill does not show whether the shipment covered by it moved on a through

or a local train, either in whole or in part, and does not show even by what route the shipment did in fact move. (See forms of waybill included in Exhibit 57 Parker, Vol. 6 G. N. case.) It therefore follows that no examination of station abstracts and waybills could possibly disclose by what train or trains or by what route the shipments moved or the number of ton miles which were produced in its movement.

In this case, Table 6 corresponds with the Table 6 of Exhibit 3-M in the Northern Pacific case, and as we understand, is based on the assumption that each west-bound train hauled over its whole run the exact tonnage, gross and net, with which it started, and that each east-bound train did the same thing. It is conceded that there is no foundation for the assumption that no shipments or cars were taken on or put off between division termini, but it is assumed that west-bound trains, for example, would put off as much freight and as many cars between division termini as east-bound trains would pick up between the same termini. Heretofore we have shown in the Northern Pacific case that such assumption is contrary to the truth. It is undoubtedly without foundation in this case. It is impossible that an agricultural territory would receive as many tons of freight as it would ship out. It is impossible that as much freight moves to the mines in Northern Minnesota, for example, as moves from them. The ore all moves from the mines to Lake Superior, and by Exhibit 53 Ward it appears that in 1908 6,262,684 tons of ore moved on the Mesabi division alone out of a total of 8,231,297 tons of all kinds of freight.

Further, these tables appear to be unreliable if effort is made to ascertain the average length of haul of freight moving on local trains. According to Table 5, 723,621 interstate tons and 275,781 intrastate tons were entitled to move on local trains, being a total of 999,402 tons, which, divided into the total number of entitled to local train ton miles appearing on the same table, 49,722,227, produces an average haul of about 50 miles. But if the same number of tons, 999,402, be divided into 75,195,685, the local train ton miles as shown on Table 6, an average haul of about 75 miles is produced.

Again, Mr. Hillman claims that in making his Table 10 for the ascertainment of the losses due to the rates complained of, he examined waybills covering 258,011 intrastate tons (p. 1539, Vol. 3 G. N. case). The number of intrastate tons so examined is more than 29,000 less than as shown on Table 5, the total there being 287,635. And if ton miles be compared, it appears that he used 28,672,000 ton miles (p. 1539 of his testimony) in arriving at the intrastate revenue per ton per mile, as against 30,855,259 as shown on Table 5. And it also appears from his testimony, at the same page, that it is his claim that the ton miles so used in the ascertainment of the revenue per ton per mile were excessive, because he multiplied the number of tons by 113.3, the average haul as claimed by complainants, instead of 106.85, the average haul which he claimed he established. If he had used his own average haul as the multiplier, the ton miles produced would have been about one and a half million less than that actually used, while the number which he actually did use was more than 2,183,000 ton miles less than he

shows on Table 5. In other words, in the ascertainment of revenue per ton per mile, he divided the total revenue of the intrastate business examined by a number more than 3,680,000 ton miles less than the actual number of intrastate ton miles examined by him and shown on Table 5.

It is clear notwithstanding his testimony that he did not examine the same waybills for the preparation of his Table 5 as for the preparation of his Table 10. The tons and ton miles are too far apart.

We cannot refrain from calling attention to the amount of work involved in preparation of Table 5, if in fact it was prepared, by an examination of 750,000 waybills. Exhibit 57 Parker embraces four waybills, number 3246, 13081, 13113 and 13213, respectively.

To make the table by the use of the same it was necessary to inspect each waybill and ascertain:

(a) The weight of the shipment.

(b) Whether it was carload or less than carload business.

(c) Whether it was interstate or intrastate business.

(d) Assign to it a routing.

(e) Ascertain whether it could be moved the whole or a part of the distance by a through train running a full division length without doing any business at stations between the division termini, and, if it could be moved a part of the distance on a through train, to ascertain that distance, and also the distance that it must be moved by local trains, that is by trains doing business at stations between division termini.

(f) Assign the weight of the shipment to the class or classes of trains by which he claimed it was entitled to be moved.

(g) To find the ton miles produced by each class of train it was necessary to multiply the weight of each shipment by the distance it was hauled on a local train or trains and also to multiply the weight by the distance, if any, it was hauled on a through train or trains.

He claims that he examined 750,000 waybills to make this table. (Vol. 3 G. N., p. 1506-7, 1515.)

In order that the amount of work involved may be made to appear, let us take the concrete instances illustrated by the waybills in evidence above referred to.

Number 3246 covers a shipment of chairs of four different kinds, weighing in the aggregate 385 pounds, from the Minnesota Chair Company, at the Minnesota Transfer, to H. P. Krough Co., at Argyle, Minn. Minnesota Transfer is midway between St. Paul and Minneapolis. An inspection of the map of the system in the State (Complainants' Exhibit 1 Hogeland, Vol. 6 G. N.) shows that Argyle is in Marshall County near the northwest corner of the State. There are at least two practical routes between these points: (1) via Melrose, Barnesville and Crookston, (2) via Willmar, Breckenridge, Moorhead and Crookston. There is also at least one other route which might be used without greatly increasing the distance, namely, via Sauk Center, Cass Lake and Crookston. The waybill does not show which route was actually used. If Mr. Hillman assigned it to the first route mentioned, the shipment would be wholly intrastate. If he assigned it to the second route mentioned, the shipment would be inter-

state, because a part of the route—from Breckenridge to Brushvale, a short distance,—would be in North Dakota. If he assigned it to the third route mentioned, it would be intrastate. By any of the routes, the shipment could be moved a part of the distance on a through train, but must be moved on a local train a part of the distance.

If the first route via Melrose, Barnesville and Crookston be taken, the distances by divisions would be as follows:

Minnesota Transfer to Melrose, whole division	104 miles
Melrose to Barnesville, whole division	109 miles
Barnesville to Crookston (or Redland) whole division	81 miles
Crookston to Argyle, local	40 miles
Total	334 miles

If he assumed through train service over each of the divisions, in order to ascertain the through train ton miles, he must multiply the weight, 385 pounds, by the aggregate distance of the three divisions, 294 miles; and if he assumed local train service from Crookston (or Redland) to Argyle, in order to ascertain the local train ton miles, he must multiply the weight by the distance, 40 miles.

Number 13081 (Exhibit 57 Parker, Vol. 6 G. N.) covers a shipment of eight cases of giant powder from Janney Semple Hill Co., from Minnesota Transfer, to Gadola Brothers, at Ogilvie, Minnesota. An inspection of the map above referred to shows that Ogilvie is in Kanabec County, northwesterly from the Minnesota Transfer. The shipment is intrastate and may

move by either one of two routes: (1) via Elk River and Milaca, (2) via St. Cloud and Milaca. If it moved by the first mentioned route, the distances would be as follows:

Minnesota Transfer to Elk River	35 miles
Elk River to Milaca	33 miles
Milaca to Ogilvie, (about)	10 miles
Total	78 miles

If it moved by the second route mentioned, the distances would be as follows:

Minnesota Transfer to St. Cloud	70 miles
St. Cloud to Milaca	30 miles
Milaca to Ogilvie	10 miles
Total	110 miles

In either case, the movement would necessarily be made wholly by local train. In order to ascertain the number of local train ton miles, he must multiply the weight, 232 pounds, by the distance, 78 or 110 miles, depending upon which route he selected. The waybills do not show, and he could not ascertain, by what route any particular shipment moved. It is apparent that if in any case he selected the shortest route, whereas the shipment actually moved by a longer route, the ton miles ascertained by him would necessarily be too small. It is well known that economical operation frequently requires shipment by a longer route. Indeed, it is common railway practice to concentrate less than carload lot shipments at terminals, in order to secure good car and train loading.

For example, a shipment from Anoka, or indeed such a shipment from Willmar to a distant point in North Dakota, Montana or beyond might first be moved to Minnesota Transfer to be loaded in a car containing other freight for the same or a nearby destination.

It is difficult to ascertain how much time would be required to make the necessary calculations illustrated by the two instances above mentioned. If it be assumed that five minutes would be required for each waybill, it would take 3,750,000 minutes, and it does not seem that five minutes is too much to allow for the determination of the class of the shipment or shipments covered by each waybill, for the assignment of a routing for the same, for the ascertainment of the portion of the distance over which the shipment could have been moved by through trains and the portion or portions of the distance which it must necessarily move on local trains, and for the multiplications of weight by the distance or distances, and the necessary compilations and additions involved in assigning the results to the form of Table 5.

The work is of such a character that six hours, or 360 minutes, would seem to constitute a fair day's work for a clerk, and 300 such days, or 108,000 minutes, would constitute a fair year's work. At that rate, it would require more than 34 years to examine the 750,000 waybills which he claims were examined in the Great Northern case alone. He claimed that there were examined in like manner about 500,000 other waybills and 10,000 station abstracts in the Northern Pacific case, and testified, as heretofore pointed out, that all of his work in the Northern Pacific case amounted to the equivalent of about four years'

work for one man. This would allow less than a minute for the examination of each waybill, and it is to be borne in mind that the other work involved was very great indeed. The work was so great that complainants did not and could not undertake to duplicate the examination of this enormous number of waybills to ascertain whether or not these "entitled to" tables were in fact made in accordance with Mr Hillman's claim.

In this case Table 5 and Table 6 are made the factors and constitute the key for the division of freight operating expenses between the intrastate business, and as shown in the Northern Pacific case these tables *may be* so used as to produce any desired result. For example, he finds that the ton mile train movement cost on local trains is 3.625 times as much as the through train ton mile cost (Subdivision C of Table 6), and, as heretofore shown by Table 5, he assigns only 49,722,227 ton miles to local trains (Table 5), but Table 6, offered to show the actual performance, shows 75,195,685 ton miles under the head of local trains. In other words, Table 6 shows the performance of 50% more ton miles by the more expensive local trains than does the entitled to Table 5. Further, by assigning a relatively large number of interstate and a relatively small number of intrastate ton miles to the local trains the cost of the intrastate business is made to appear less, and by this method he reaches the conclusion that the intrastate business costs for train movement items only 1.8344 times as much per ton mile as the interstate business, notwithstanding, his finding that the local train cost is 3.625 times as much per ton mile as the through train cost.

The average haul of the intrastate business, 113.3 miles, is no greater than an average division run. The interstate haul, if the ore division be eliminated, is 621 miles. Yet he assigns in his "entitled to" table only 14,942,011 intra ton miles to local trains and 15,913,247 to through trains. Even theoretically it would seem to be impossible to assign more to the cheaper through train.

The conclusion that in 1908 it cost the company less than 40 cents (without deducting losses, $129,852.53) to earn an intrastate dollar and more than 60 cents to earn an interstate dollar (Table 11) is contrary to the testimony of all experienced men and all the decisions. This conclusion does not depend alone upon the manner of ascertaining cost, but is due in part to an erroneous overcharge of more than $400,000 to the intrastate revenue, as will hereafter be pointed out.

Mr. Hillman's Table 11, Exhibit G, Vol. 5 Great Northern Case, states the Intrastate Freight Revenue at $2,769,210.50.

This is more than $400,000 too much.

The Master, on the testimony of complainants (Exhibit 30 Parker, Exhibit 53 Ward, Exhibits 60, 61, 62, 63 and 64 Parker, Vol. 6 G. N. case, and Parker's testimony, page 635 et seq., Vol. 2, and page 1735 et seq., Vol. 4 G. N. case), found the Minnesota intrastate freight revenue to be $2,366,359.02. (P. 270, Vol. 1 N. P.)

No exception was taken to the Master's finding upon this point, and no assignment of error challenges the correctness of this determination.

Under the circumstances, undoubtedly we would be justified in not going beyond the Master's Report and

the decision of the Circuit Court, but, in order that the matter may be clear in case appellants should hereafter make any claim that Hillman's determination is right, we will briefly refer to the testimony upon the point.

Prior to July 1, 1908, the Great Northern Company and all the other companies included certain "local interstate" business as "intrastate" in the statistics kept by them. The business so included was relatively small in volume when compared with the total interstate business or with all business. (Exhibit 64 Parker.) It consisted of business originating or terminating outside of Minnesota on the line of another carrier, but which was hauled by the Great Northern between stations in Minnesota without passing out of the State.

It was the claim of the defendants that such interstate business so included as intrastate business was in fact moved by the same trains, at the same cost and under the same circumstances as was the strictly intrastate business of the Company. The revenue per ton mile on such "local interstate" business was on the average a trifle lower than on the strictly intrastate business. (Exhibit 64 Parker.)

At the trial, both parties undertook to ascertain the exact amount of the strictly intrastate freight business in each case. There was no difference between the parties on this point in the Northern Pacific or in the Minneapolis & St. Louis case.

Mr. Parker, the Auditor of freight receipts of the Company, for the purpose of ascertaining the correct amount of the Minnesota intrastate freight business, actually compiled the tons, ton miles and revenue on

the commodities affected by the rates prescribed by Chapter 232, complained of, from the Company's monthly station agents' abstracts of waybills for the years ending June 30, 1907 and 1908. The exact division between the strictly intrastate business and the "local interstate business" could not be made without an examination of each waybill to and from junction points in Minnesota. In order to make such division, all carload waybills from Minnesota junction points to stations on the Great Northern Railway in Minnesota were examined, and detailed statements from agents at Minnesota junction points were obtained, showing carload waybills to their stations from all points on the line of the Company in Minnesota during the months of October, 1907, and April, 1908, and the tons, ton miles and revenue of the strictly intrastate business and of the local interstate business were thereby ascertained.

Similar apportionment was made in connection with each interline carload waybill to and from stations on the line of the Company in Minnesota during these months.

In this manner a complete examination of all of the business covered by the commodity rates complained of was made for the two months in question.

This gave an actual division between the strictly intrastate and the local interstate business by commodities covered by Chapter 232 complained of for the two months, and similar information was ascertained by like examination of the movement of *all other* carload commodities for the same months. (P. 635-636, Vol. 2 G. N.) Then it was ascertained what percentage the strictly intrastate and the local

interstate respectively bore to the total by commodities for these months. These per cents were applied to the actual figures by commodities for each year.

An example of how the work was done is to be found on pages 636-637. The commodity business so examined and separated includes by far the larger part of all the intrastate business. (Exhibits 22 and 30 Parker.)

All the intrastate business covered by the orders of the Commission prescribing the merchandise or class rates complained of, the tons, ton miles, and revenue were compiled from the waybills, and the strictly intrastate business was shown for July, 1907, and April, 1908, for the whole State. (P. 646-647.)

(The work was being done in August, 1907, and a great saving in labor was effected by selecting the business of July, rather than October, 1907.) (P. 647.)

In July, 1907, and April, 1908, there was moved in less than carload lots between Minnesota points and eastern terminals (St. Paul, Minneapolis Minnesota Transfer and Hamline Transfer) 18.47 per cent of the total less than carload business of the year ended June 30, 1908. Such percentage (18.47) divided into the amount of the strictly intrastate business, so ascertained for such two months, produced the intrastate business for the year.

It was undoubtedly fair to assume that, if in these two months 18.47 per cent of the year's business moved between Minnesota points and the eastern terminals, like percentages of total Minnesota intrastate business moved in the same two months, because 90 per cent of all of the Minnesota business (formerly kept as intrastate, but in fact including intrastate and what is called

"local interstate") moved between Minnesota points and these eastern terminals.

By Exhibits 18, 59, 60 and 61 Parker, Vol. 6 G. N., it satisfactorily appears that the months selected were fairly representative, so far as ton miles, revenue and revenue per ton per mile are concerned.

Exhibits 19 and 20 Parker, respectively, show the Minnesota intrastate tons carried, ton miles and per cent of intrastate ton miles to total in Minnesota and to total on system, and the average length of haul for the fiscal years ending June 30, 1907 and 1908.

Exhibit 30 Parker shows that the Minnesota intrastate business for the year ended June 30, 1907, was $2,516,920.31, and for the year ended June 30, 1908, $2,366,359.02.

Exhibit 60 Parker shows by months, for the year ended June 30, 1908, the intrastate business (including the so-called "local interstate" erroneously kept as intrastate) by tons carried, ton miles, revenue, length of haul, revenue per ton and revenue per ton per mile. The average revenue per ton per mile for the whole year was *$0.01330*.

For the fiscal year ended June 30, 1909, the Company regularly kept separately its strictly intrastate business in Minnesota by tons carried, ton miles, revenue, length of haul, revenue per ton, and revenue per ton per mile. It also separately kept the so-called "local interstate" business, which had theretofore been erroneously included in the intrastate business. For the purpose of comparison, Exhibit 61 Parker shows such business—that is the strictly intrastate including such local interstate business—, and it appears that the average revenue per ton per mile for the year was

$0.01447 being only 1.11 mills in excess of that shown by Exhibit 60 for the preceding year.

Exhibit 62 Parker shows the strictly intrastate freight business in Minnesota for the year ended June 30, 1909, by months, and that the average revenue per ton per mile for the year was $0.01529.

Exhibit 63 Parker shows the so-called local interstate business for the year ended June 30, 1909, by months, and that the average revenue per ton per mile was $0.01247.

The Master found that the average revenue per ton mile from the strictly intrastate business for 1908 was 1.381 cents, being 0.51 mill higher than as shown on the local business (including intrastate and local interstate), as shown on Exhibit 60 Parker.

Exhibit 64 Parker was prepared for the purpose of comparing the business of 1908—intrastate, local interstate, total of both, interstate and total of all—with the corresponding business of 1909, which was, as a matter of routine accounting, kept separately under these headings by number of tons carried, ton miles, revenue, average length of haul, revenue per ton and revenue per ton per mile; that is, to compare the results *calculated*, as above described, on the business of 1908 with the *actual* results of 1909, kept separately as a matter of routine accounting. It appears that in 1909 the revenue per ton per mile of each such class of business was higher than the revenue per ton per mile of the corresponding class in 1908. This is due, not to a change of rates, but to the fact that relatively a less proportion of low class commodities moved in 1909 than in 1908. For example, in 1909 the revenue per ton per mile exceeded that of 1908 on

strictly intrastate business 1.48 mills per ton per mile, on *local interstate* .43 mill per ton per mile, on the total of both 1.11 mills per ton per mile, on the interstate (that is the total interstate less the so-called "local interstate") .37 mill per ton per mile, and on the total of all business .44 mill per ton per mile.

The intrastate freight revenue, by years, as shown by complainants' proof, was as follows:

1907, $2,516,920.31 } (Exhibit 30 Parker, Vol. 6 G. N.)
1908, 2,366,359.02 }
1909, 2,338,260.17 (Exhibit 64 Parker, Vol. 6 G. N.)

The total freight revenue in Minnesota, for the same years, was as follows:

1907, $17,328,507.88 } (Exhibit 64 Parker, Vol. 6 G. N.)
1908, 15,658,661.07 }
1909, 15,569,575.41 (Exhibit 64 Parker, Vol. 6 G. N.)

There is no controversy between the parties as to the total amount of freight revenue from all sources within the State for any of these years.

The amount of intrastate freight revenue for 1907 is established by the *uncontradicted* evidence of Mr. Parker, the Auditor of freight receipts, and such revenue for 1909 *was separately and regularly kept, as a matter of routine accounting, and must be taken as conclusively established.*

Mr. Hillman's estimate of the intrastate freight revenue is without foundation.

He claims that such revenue was $2,769,210.50. (Table 11.) This is higher than the corresponding revenue in 1907 or 1909, and 1907 was a very good year, if not the very best in the history of the company.

Mr. Hillman's own account of the manner in which he arrived at this revenue is, in substance, as follows: In the preparation of his Table 10 of the Exhibit G, which was made for the purpose of showing losses due to reductions of rates complained of, he says he examined $243,487.88 par of the waybills on business covered by the Commission's order (p. 1535, Vol. 3 G. N.) and $268,173.11 of waybills covered by the commodity rates complained of, making a total of $511,660.99 (p. 1535), and that the class rates complained of did reduce revenue from business covered by the same 16.85 per cent, and that the commodity rates complained of would have reduced revenue 8.821 per cent. That the business so examined was that of October 1907 and April 1908. (p. 1536-7). He conceded that the total number of ton miles produced by the company in the State in 1908 was as stated in Exhibit 53 Ward (p. 1538). He said that in prepnring his "entitled to" table, he ascertained that 7.484 per cent of the total traffic in Minnesota was intrastate business therein. He applied this percentage to the total number of ton miles as shown by complainants, and there was produced 158,303,933 ton miles, assumed to be intrastate, as against 171,317,766 ton miles as shown by complainants (Exhibit 30 Parker). He claimed that he found the average haul of the intrastate business to be 106.85 miles, but he apparently conceded, or at any rate assumed, that such average haul as shown by complainants, 113.3 miles, was right. It

appears that in making his so-called "entitled to" table, he did not keep any record of the ton miles of each shipment. When he testified, he had mislaid the memorandum which showed the number of tons of intrastate business which produced the revenue, $511,660.99. His memory was that the number of tons was 258,011. He reserved the right to correct this figure if he found, upon examination of his memorandum, that he was mistaken, but he never changed his statement. He multiplied the number of tons, which he says he remembered, by the average haul, as claimed by complainants, 113.3, and says there was produced 28,672,00 ton miles, which he divided into the revenue, $511,660.99, and produced 1.7493 cents per ton per mile for the year 1908, as against 1.381 as found by the Master for 1908, and 1.529 for 1909, as *regularly kept by the company as a matter of routine accounting.* He then multiplied 158,303,933 ton miles by 1.7493, and produced $2,769,210.50. That is to say, with about 13,000,000 ton miles less than as found by the Master, he produced a revenue of more than $400,000 greater.

The intrastate tons, as stated by him at page 1539, in round figures, 258,000, are less by 29,000 than the intrastate tons, in round figures, 287,000, shown on his Table 5. His ton miles, testified to on page 1539, in round figures, 28,600,000, are 2,200,000 less than as shown on Table 5, in round figures, 30,800,000, and are, in round figures, 1,500,000 greater than they would have been if he had multiplied the tons, 258,011 by the average haul, as found by him, 106.85, instead of 113.3, the average haul established by complainants. That is to say, if he had adhered to his own figures, the intrastate ton miles used to ascertain the amount of

revenue would have been, in round figures, 3,700,000 less than as shown on his Table 5. *It is difficult to see how a difference so large, more than 12 per cent, could arise from two examniations of the same way-bills.*

It will be noticed (p. 1535-58 et seq.) that Table 10 of Exhibit G was prepared to show, *not the revenue from all the intrastate business*, but only the revenue (on the basis of the old rates and on the basis of the new rates) from *that part* of the intrastate business which suffered a reduction of rates by the orders and laws complained of. The only purpose of the table was the ascertainment of the amount of diminution in revenue chargeable to the reduced rates. There was some commodity business of the kind covered by the rates prescribed in Chapter 232 complained of, upon which existing rates were lower, *at least between certain stations*, than the prescribed rates, and by Section 7 of the act complained of, it is in substance provided that existing rates lower than the prescribed rates cannot be raised, and there was also certain other low class commodity business not covered by either of the orders or the act complained of, and upon which the rates were not reduced *at all*. Among the non-affected commodities may be mentioned ore (if there be any intrastate), hay, straw, potatoes, brick, stone, cord-wood, telegraph poles, etc., etc. It was not necessary to take into account the non-affected intrastate tonnage or revenue to ascertain the losses chargeable to the rates complained of. The volume of such non-affected business is not accurately shown in the Great Northern case, but it clearly appears that it was substantial, by comparing

Exhibits 21 and 22 Parker with Exhibit 30 Parker. Vol. 6 G. N. case. The Exhibits 21 and 22 show the intrastate revenues for 1907 and 1908, respectively, derived from the *affected commodities*, and Exhibit 30 shows the total intrastate revenue from *all business*. Hillman's testimony (p. 1535-8 et seq.) shows that to arrive at the losses calculated by him, as shown on his Table 10 of Exhibit G, he examined *only the affected class business and certain commodity business affected by Chapter 232 complained of*. The revenue derived from the class business examined amounted to $243,487.88, and from the commodity business affected $268,173.11, making an aggregate of all affected business examined $511,660.99 (p. 1535) and the total tons of both examined aggregated only 258,011.

It is clear, therefore, that Hillman did not include the ton, ton miles or revenue of and from non-affected business; that the omitted business was of low class, moved at low rates—undoubtedly much below the average of all—and that necessarily the ton mile revenue (1.7493 cents), as acertained by him (p.1538), and the total intrastate revenue, $2,769,210.50 (p. 1539), which he produced by multiplying his estimated ton miles for the year by such average ton mile revenue, are excessive.

Again, his determination of the amount of intrastate revenue is discredited by his other conclusion that in the intrastate freight business it cost the Great Northern Company *less than 40 cents to earn a dollar*, while in the corresponding interstate business *it cost 60.58 cents to earn a dollar*, whereas he found that it cost the Northern Pacific 55.21 cents to earn a dollar in its intrastate freight business, and 54.47 cents in its corre-

sponding interstate business, and he found that (without deducting losses due to rates complained of) it cost the Minneapolis & St. Louis Company 41.9 cents to earn an intrastate freight dollar, and 85.03 cents to earn an interstate freight dollar. (See Report of Master, p. 257-258, Vol. 1 N. P. case.)

Net Earnings as Shown by Hillman Applied to Valuation, G. N. Case.

By his Table 11 he shows net, above taxes and expenses, intrastate freight $1,450,034.33 (after deducting $129,852.53, the estimated commodity loss), which, divided by $16,442,200, proportionate value assigned by the Master, produces 8.818 per cent. He also shows net, above taxes and expenses, interstate freight $4,649,824.35, which, divided by $92,360,079, valuation assigned by the Master, produces 5.034 per cent.

If there be deducted from the net intrastate business, $402,851.48, the amount which he erroneously included in the intrastate freight revenue, there would remain $1,047,182.85, sufficient to yield 6.368 per cent upon the valuation assigned thereto.

Minneapolis & St. Louis Case.

Heretofore it has been sufficiently shown that the rates complained of are confiscatory on the Minneapolis & St. Louis road, even on defendants' basis of cost.

Defendants do not claim Hillman's results to be right.

Defendants did not claim that Hillman's *results* were

right, but did claim that the methods or scheme employed by him illustrated that the cost of each class of business *could be* ascertained by his, or some similar, scheme and that complainants were bound to show the cost of the intrastate business and employ for that purpose this, or some, method of accounting.

To this we answer that the proof in this case elsewhere called to attention establishes beyond doubt that there is *no method of accounting known* by which the intrastate cost, freight or passenger, can be kept or ascertained; that the Hillman method is without value and as used by him was made to produce any result desired. It is an untried invention unsupported by the testimony of any other witness.

The findings of the Master and Circuit Court are more than sustained by abundant evidence and the same in kind that has always been the basis of decisions in like cases.

IV.

Apportionment of total Minnesota valuation to the different classes of business.

The Master found the total value of the property of each company in Minnesota, the total earnings from all sources in Minnesota, the earnings from or chargeable to each class of business—passenger business and freight business and the intrastate and interstate business of each. Neither the total earnings from operation nor the allocation or apportionment of the same to the different classes of business is complained of by the appellants.

He found the total operating expenses and taxes chargeable to the business of each company in Minnesota. There was no controversy between the parties at the trial with respect to the *aggregate* of these items.

He found the operating expenses and taxes chargeable to the freight department and to the passenger department and to the intrastate and interstate business of each. There was controversy at the trial with respect to the division of the operating expenses, and it is claimed by appellants that the Master assigned too much to the intrastate freight business and too much to the intrastate passenger business. (See assignments of error 12, 13, 16, 17, 18, 19, page 447, Vol. 1, N. P. case.)

From these findings the Master determined the *net earnings—over operating expenses and taxes*—of each company in Minnesota derived from its intrastate business, both freight and passenger, separately and taken together.

Net earnings in Minnesota of each company over operating expenses and taxes on its intrastate business, freight and passenger separately and taken together.

	Total	Freight	Passenger
N. P.....$	553,568.86	$210,905.11	$342,663.75
G. N.....	1,030,802.18	898,997.81	131,804.37
M. & St. L...	200,903.18	143,225.01	57,678.17

(See, for N. P., table of results, Vol. 1, page 264; for G. N., table of results, Vol. 1, page 270; and for M. & St. L., Vol. 1, page 280, N. P. Record).

The Master also found the net earnings over and above operating expenses and taxes, derived from *interstate* business freight and passenger separately and taken together, and also the net earnings over and above operating expenses and taxes derived from the *total transportation business* of each company in Minnesota.

Such net earnings are referred to on the tables above mentioned as "income applicable to valuation."

To ascertain the rate of return on the Minnesota intrastate business, freight and passenger, it was necessary to determine the proportionate part of the total value of the Minnesota property of each company properly assignable thereto.

The Master apportioned such value on the revenue basis, that is, he assigned to the intrastate freight, the intrastate passenger and the total intrastate business of each company such part of the total value of the property of each company in Minnesota as the earnings therefrom respectively were of the total earnings in Minnesota.

Apportionment of value and rate of return.

Revenue Basis.

	Total	Intra	Inter
N. P.....	$90,204,545.00	$19,027,619.00	$71,176,926.00
G. N.....	138,425,291.00	30,685,833.00	107,739,458.00
M. & St. L.	21,608,464.00	8,101,013.15	13,507,450.85

(See N. P. and G. N. tables of results, and for M. & St. L. see Vol. 1, pages 274, 275 N. P. Case.)

Rate of Return.

N. P.....	6.021%	2.909%	6.853%
G. N.....	5.909	3.359	6.636
M. & St. L.....	3.10	2.47	

(See N. P. and G. N. tables of results, and for M. & St. L. see Vol. 1, pages 264, 270, 274, 279 and 280, N. P. Case.)

In the N. P. and G. N. cases, the Master apportioned value to and computed the rate of return thereon from the following classes of business: viz. freight, intrastate freight, interstate freight, passenger, intrastate passenger, interstate passenger and total of all. (See tables above referred to.)

In the M. & St. L. case he apportioned value to and computed the rate of return thereon from intrastate freight, intrastate passenger and the total of both. (p. 279 and 280.)

In the Northern Pacific and Great Northern cases he also computed the proportion of the total value of the property of each company in Minnesota which would be assigned to the intrastate business on the *operating expense basis.* The results are as follows:

Operating Expense Basis.

Northern Pacific. (See page 265, Vol. 1 N. P.)

Freight—		
Intra freight operating expenses	$1,355,273.82=	17.7%
All operating expenses	7,655,350.20=	100.0%
17.7% of $90,204,545 valuation=	*15,966,204.00	
Intra income—freight	210,905.11	
Annual return		*1.321%
Passenger—		
Intra passenger operating expenses	863,325.18=	11.28%
All operating expenses	7,655,350.20=	100.0%
11.28% of $90,204,545 valuation=	10,175,073.00	
Intra income—passenger	342,663.75	
Annual return		3.368%

*Note—In the Master's Report, at page 265, Vol. 1 N. P., 17.7% of $90,204,545 is erroneously stated as $16,166,204 instead of $15,966,204, and annual rate of return erroneously stated as 1.304% instead of 1.321%. The error appears on the face of the report and is either one of calculation or is typographical.

Great Northern. (See page 271, Vol. 1 N. P.)

Intra Freight.

Intra freight operating expenses	$1,464,629.87=	12.4%
All operating expenses	11,811,414.35=	100.0%
12.4% of $138,425,291 valuation=	17,164,738.00	
Income—Intra Freight	898,997.81	
Annual return		5.237%

Intra Passenger.

Intra passenger operating expenses	1,960,215.07	= 16.6%
All operating expenses	11,811,414.35	=100.0%
16.6% of $138,425,291 valuation=	22,978,596.00	
Income—Intra Passenger	131,804.37	
Annual return		0.574%

The Master (p. 271) shows that if the commodity rates complained of had been in effect the rate of return on the intrastate freight business would have been 4.937%.

The Master said: (See subdivision XIV of the report, N. P. Case Vol. 1, 247.)

> *"The revenues from each class of business within and properly assignable to the state are known and the amount thereof and the separation as between states accepted by both parties and are practically free from estimated approximations.*
>
> Of course, any division of property value between the two classes of business, freight and passenger, must be an approximation, but one made on the relation of gross revenue derived from each kind of business has been uniformly accepted as the fairest, all things considered, in all rate cases heretofore judicially determined. While a division of property valuation on the relation of cost has been suggested by defendants it was practically conceded to be as open to criticism as that made on the basis of revenue. Relative cost as hereafter found is at best a rough and unsatisfactory approximation, necessarily inaccurate, and should not be accepted as a divisional basis if it can be avoided. The revenue basis is not ideal, but it has an element of certainty possessed by no other and is not more objectionable in other respects."

Appellants' assignments of error 10, 11 and 19, Vol. 1, 447 N. P. Case, relate to the Master's apportionment of value to the different classes of business and allege error as follows:

(a) In apportioning the value of the property used in the state between passenger and freight business on the gross earnings basis (Assignment 10);

(b) In apportioning the value assigned to the freight and passenger business respectively between interstate and intrastate traffic on the gross earnings basis (Assignment 11);

(c) In refusing to dismiss the case for failure of proof by complainant as to the actual value of the property employed in the service in the state, and the actual value of the portion thereof employed in *intrastate business.* (Assignment 19.)

The appellants' position *before the Court* was that the apportionment of value between the freight department and the passenger department should be made by taking the total of ton miles added to the passenger miles and assigning to the freight department such proportion of the total valuation as the number of ton miles is to the total number of both, and to the passenger department such proportion of total value as the number of passenger miles is to the total number of both.

In exception III (p. 323-325, Vol. 1 N. P.), defendants state their grounds of objection to the apportionment of value between the two departments as made by the Master, and therein it is said:

> "In the absence of a better basis, we shall insist on the division being made on the relative ton and

passenger miles, which would give a very different result from that found by the Master."

By exception IV defendants claim that the total valuation assigned to the freight department should be apportioned between the intrastate and interstate business on the straight ton mile basis. (See p. 325-328.)

Exception was also taken to the Master's apportionment of the value assigned to the passenger department between the intrastate and interstate passenger business, but the exception does not indicate what basis defendants claim to be right.

Defendants' evidence and argument before the Master were in support of an apportionment of value to the different classes of business on the basis of operating expenses or on the basis of revenue, and the Master found the results on both bases.

Mr. Staples, in his testimony N. P. Case, Vol. 6, page 2692 et seq., when asked: "Q. State what your judgment is with reference to the proportion of the property located in the State of Minnesota which should be taken into account in ascertaining what a return should be based upon; that is, assuming that the return is to be based upon the value of the property itself," after reviewing different methods, said: (p. 2695-6.)

> "The plan that would appeal the strongest to me would be that of the operating expense, the relation the item of interstate traffic would bear to the intrastate traffic. I say that because I believe that is the most stable. * * * The question of operating expense account is the most constant factor; that is, it is the factor which

would remain, in my opinion, the most stable and would fluctuate the least."

This testimony was given in his direct examination, and inasmuch as Mr. Staples is a party to the suit, it seems to us that this ought to be taken as a concession that the operating expense basis for the apportionment of total value to the different classes of business *is not an unfair basis.* Its use would be more favorable to the complainants than the use of the earnings basis.

With respect to the gross earnings basis, Mr. Staples said: (p. 2694)

> "My judgment is that the gross earnings basis or the net earnings basis would not be fair; they would vary, different years, according to conditions; in other words, they don't maintain a stable relation or condition."

The reason given by Mr. Staples is not urged as a ground of the exceptions taken to the Master's use of this basis.

The reason is not valid, for it is likely that if the intrastate business were to increase or decrease substantially the causes which produced the change would also produce a corresponding change in the interstate business. While it is true that the relation of operating expense to gross earnings is unstable and fluctuates considerably with changes of business conditions, there is no reason apparent for assuming that there is any unstability *in the relation of gross earnings intrastate to gross earnings interstate.*

In the argument on these cases *before the Master*, the solicitors for the parties respectively prepared printed briefs for the use of the Master and furnished copies to their adversaries. Honorable Thomas D. O'Brien, one of the solicitors of the defendants, prepared such a brief. He said, at pages 71, 72:

> "What is the fair value of the property devoted to intrastate commerce in Minnesota upon which a return from such commerce should be based?
>
> It is alleged in the bill of complaint, page 3, par. 1, 'The stock and bonds of the company outstanding represent the whole system.' *As has already been shown, the physical value of the properties within Minnesota are one-fifth of the physical value of the entire system.* Without regard to the question of over-capitalization it is plain that the capitalization at whatever amount it is taken *should* be assigned territorially in proportion to the physical value of the properties included in such territorial division. (Then follows a statement of the capitalization.)
>
> This capitalization must be again divided between interstate and intrastate business. An examination of Tables 7 and 11, Ex. 3-M, Hillman, (N. P. Case), shows that of the total expenses in Minnesota 24% plus, or practically one-fourth of the same, is incurred in the transaction of intrastate business. The earnings are in practically the same proportion, Table 14, Ex. 3-M, Hillman. Indeed the intrastate earnings are less than one-fourth of the total earnings in Minnesota as Table 14, Ex. 3-M, Hillman, because of the conditions so fully explained in the testimony, contains a slightly excessive statement of intrastate earnings.

> It is therefore entirely fair to divide the Minnesota property by assigning one-fourth of the same to the transaction of exclusively intrastate business."

It was then counsel's position that either the gross earnings or the operating expenses was a fair basis for apportionment of total value to the intrastate and to the interstate business respectively. It is to be noted that his contention with respect to the facts in the Northern Pacific case indicated that each basis would assign about the same proportion of value to the Minnesota property, that is, about 24%. Out of a total valuation of $90,204,545 the Master assigned to intrastate $19,027,619 or 21%, and to interstate the balance $71,176,926 or 79%. (See Table of Results N. P. Case, page 264.) The error, if any, therefore was in favor of appellants and against complainants.

May the defendants now contend for a less percentage than that so formally conceded to be right?

Hon. Edmund S. Durment, another of the defendants' solicitors, in his printed brief submitted to the Master and to us discussed the subject of the apportionment of the Minnesota valuation to the different classes of business. The following is quoted from his brief, at page 136 et seq.:

> "When the value of the Minnesota property shall be found it will be necessary to apportion that value between the interstate business and the intrastate business. On what basis shall it be done? There is no basis for making the division which will commend itself to all minds as the only proper basis. The apportionment must be arbitrarily made, or

at least according to the opinion and judgment of the particular individual called upon to make it. Some will consider that it should be made on the basis of the gross operating revenue received from each, inter and intrastate business. It is said the gross operating revenue received from each within the State is easily susceptible of being definitely and accurately determined, and inasmuch as the property within the State is used in common for obtaining revenue from each class of business, the property so used should be chargeable to each according to the revenue derived from such use.

Some contend that the apportionment should be made on the basis of the operating expense, because the cost of doing one class of business exeeds that of doing the other, and for any given number of passenger or ton miles of intra there is greater use of the road than for a like number of passenger or ton miles of interstate business. Mr. Justice O'Brien of the Supreme Court of Minnesota, formerly counsel in this case, recently, and apparently after much consideration, in an address before the National Society of Railroad Commissioners declared strongly in favor of the division being made on the basis of gross operating expense.

In our opinion one rule is as logical as the other, equally strong reasons may be assigned in favor of the one rule as of the other, and equally serious objections can be made to the one as to the other. Which would be the better rule to adopt would be a matter of individual opinion. Under such circumstances, the exercise of judgment and discretion and the acting on opinion (if there is to be such), is a matter for the legislature. *Consequently the Court should follow whichever rule will most strongly tend to support the validity of the rates in question.*"

All courts have adopted the revenue basis for the apportionment of total value to the different classes of business.

(See Judge Sanborn's decision in these cases, pages 426, 427 N. P. Case.)

Love v. Railway Companies, (Oklahoma Rate Cases) (C. C. A.) Eighth Circuit, 185 Fed. 321;
M. K. & T. Ry Co. v. Love, (C. C.) Western District of Okla., 177 Fed. 493;
St. Louis & S. F. R. R. Co. v. Hadley, (C. C.) Western District of Missouri, 168 Fed. 317;
In re Arkansas Rate Case, (C. C.) Eastern District of Arkansas, 163 Fed. 141;
Northern Pacific Ry. Co. vs. Keyes, (C. C.) District of North Dakota, 91 Fed. 47;
Chicago, Milwaukee & St. Paul Railway Co. vs. Tompkins, 90 Fed. 363;
Ames vs. Union Pacific Ry. Co., (C. C.) Nebraska, 64 Fed. 165.

In 1908 the intrastate rates were low when compared with corresponding rates, therefore the apportionment of value on the revenue basis was not unfair to defendants.

While it may be true that the revenue basis for the apportionment of property among the various classes of business is not perfect and is subject to some possible criticism, it seems that no other basis has ever been employed by any court dealing with the subject. The substance of the principal criticisms made against the employment of this basis is *that revenue does not measure the use of the property by the different classes of business respectively,* and by way of illustration it is pointed out, as was done in the exceptions of the

defendants above referred to and in the *Tompkins case*, 176 U. S. 167, *176*, that a mere change in the rate upon any particular class of business will not affect the amount of use of the whole property required to conduct the business. These illustrations may be and have been so employed as to produce most extreme and apparently absurd results.

It seems to us that the value of the criticism necessarily must be estimated by ascertaining whether or not the rates on or revenues derived from any particular class of business under examination are *disproportionate* to the rates upon and revenues derived from the other classes of business for which the property is used.

We think all must concede that if the revenue derived from any class of business under examination is not at all disproportionate—either too high or too low—when compared with the revenues derived from other classes of business in the conduct of which property is used, then the revenue basis will produce right results. In the language of the exception (p. 324, Vol. 1 N. P.) of the defendants, *"the difference in unit revenue, while arbitrary, is theoretically founded on the difference in the cost of the service."* It is to be assumed, broadly speaking, that it was the aim of the authorities to make a body of railroad rates relatively fair as between the intrastate freight business and the intrastate passenger business. The Commission, shortly before the sweeping reductions complained of, *reported that the rates were equal.* (p. 21 Annual Report of Commission 1904.) (See also pp. 345, 357 Appellant's Brief herein.)

The reductions made were general and applied simi-

lar percentages of reduction to the intrastate passenger business as to the intrastate freight business.

The merchandise rates were reduced 20 to 25 per cent.

The merchandise rates to jobbing centers were reduced 13.58 per cent.

The rates on coal and grain were voluntarily reduced 10 per cent while the Commission were considering the commodity rates.

The legislature then reduced rates on grain, lumber, livestock and coal, 7.37 per cent.

The average of all the freight reductions must be about 15 or 20 per cent.

The maximum passenger fares were reduced 33 1/3 per cent, but the average earnings per passenger mile was less than the maximum, and it therefore seems fair to say that intrastate freight rates and intrastate passenger fares were by the authority of state reduced to about the same extent.

The law of Minnesota (Revised Laws of 1905, Sec. 2009) prohibits discrimination between persons places and descriptions of traffic, in substance the same as does the Act of Congress to regulate commerce. Appellants insist upon the application of the presumption that the Commission and the Legislature acted reasonably and made lawful and valid rates. There is certainly no presumption that the rates made by State authorities are in fact discriminatory as between the different classes of traffic within the jurisdiction of the State.

If the amounts assigned by the revenue basis to intrastate business in these cases are not too large the

appellants are not prejudiced by the Master's findings and cannot complain, and all discussion as to the merits of that basis for application in other cases or generally is immaterial.

The Master has not assigned too great a proportion of the total value in the intrastate business *unless* the rates as reduced are *relatively* too high, and this will not be claimed.

Illustrations such as are used in the opinion of this court in the Tompkins case (176 U. S. 167) based upon assumptions that revenue derived from one class of business is widely disproportionate when compared with revenues derived from another class of business have no application, *because no such facts exist or are claimed to exist by appellants,* as far as we know.

Revenue measures the value of the use of property, and is therefore a good factor for apportionment of such value to the different classes of business.

Revenue, or income derived from the use of property, is always an important element—often a controlling element—in the determination of the value of the property.

The rentals yielded by a piece of real estate often measure its value. If a single piece of business property be devoted to different uses and occupied by different tenants, the rental paid by each is a fair measure of the value of the use of each.

If the owner of a farm lets the land to one tenant and the buildings thereon to another, and each, during

a long period of years, pays him the same rental, is it not right to say that the *value of the use* of the buildings alone is the same as the *value of the use* of the land without the buildings?

Disregarding the depreciation of the buildings and appreciation of the land, if any, is it not right to say that the value of the buildings alone is the same as the value of the land without the buildings?

If the same railroad and facilities are used for the transportation of freight and for the transportation of passengers,—the rate for each *being relatively fair*, when the cost of doing the business is taken into account—and each yields regularly the same amount of earnings to the company, is it not certain that the *value of the use* for each class of business is the same as the *value of the use* for the other class?

The *value of the use* of the property for each class of business is a most important consideration,—if not indeed the prime element,—to be taken into account in the apportionment of the *value of property* to the different classes of business.

We have heretofore called attention to the language of the Master in subdivision XIV of his report, page 247 Vol. 1, N. P. Case. The language of Judge Sanborn on this point is as follows: (Pages 426, 427, Vol. 1 Ibid.)

> "The Master divided the values of the Minnesota properties between freight business and passenger business and between interstate business and intrastate business on the basis of the respective gross earnings of these

classes of business. Counsel for the defendants challenge this basis of division, and contend that the apportionment should have been made on basis of the use made of the property by each of these classes of business, measured either (1) by the aggregate number of the ton miles and passenger miles of the respective classes, or (2) by the aggregate number of the car miles and engine miles of these classes. They say that if that proportion of the value of the property of a company which the number of ton miles hauled by it in Minnesota bears to the aggregate of its ton miles and passenger miles in Minnesota be assigned to its freight business, and that proportion which its number of passenger miles bears to the same aggregate be assigned to the passenger business, and if that proportion of the value thus assigned to the freight business which the aggregate of the car miles and engine miles appertaining to the intrastate freight business bears to the car miles and engine miles used in the freight business be assigned to the intrastate freight business, and the same method be pursued in apportioning value to the intrastate passenger business the apportionment will be more equitable and just.

The issue is between apportionment by use without regard to the worth or value of the use and apportionment according to the value of the use. The latter basis seems to be more logical and rational. Capitalization is founded on the worth of use, not on mere use. The value of property and of investment in every form is measured by the value of its use, not by its use divorced from the value thereof. The Minnesota Railroad Commission, the railroad companies, all rate makers, base their rates primarily on the worth of the use of the railroad machines by the various classes of freight and by the passengers, and not on the

amount of that use. The rate for hauling a ton of merchandise of the first class a mile is not five times the rate for hauling a ton of merchandise of class E a mile, because the former ton mile uses the railroad property five times as much as the latter, but because the use by the former is worth more than the use by the latter.

Moreover, there is no unit of measurement of ton miles and passenger miles, of freight car miles and freight engines miles, or of passenger car miles and passenger engine miles, divorced from the values of the uses they make of the railroad property, from the classes of loads they carry and the distances these loads are hauled. Indeed, there is no proportioning or measuring relation between such varying uses of property, when no regard is given to the values of these uses.

On the other hand, the values of the uses, the earnings of the property, unavoidably condition the value of the property used, and present a natural and equitable basis of apportioning that value to these uses. Cases may indeed be imagined in which this basis does not produce persuasive results. One of them was suggested by Mr. Justice Brewer in *Chicago, Milwaukee & St. Paul Ry. Co. v. Tompkins*, 176 U. S. 167, 176, 20 Sup. Ct. 336, 44 L. Ed. 417, and others of like character have been presented in argument by counsel. But no basis has been suggested and none has been discovered which seems to be more equitable or more accurate. It may be that there is no basis or method that brings perfect or ideal results.

But because the ton mile and passenger mile basis has no common unit of measurement, because that basis and the car mile and engine mile and the passenger car mile and passenger engine mile bases exclude the effect of the

values of the uses made of the railroad property by the various classes of freight and by the passengers carried, because there is really no proportioning relation between uses divorced from their values and the value of the property used, becaues these bases ignore the differences in the classes of freight carried and in the distances they are hauled, because the apportionment of the value of railroad property on the basis of the gross earnings of the classes of business, which disclose approximately the values of their uses of it, gives effect to these material differences, appeals more persuasively to the reason and produces results more equitable than any other basis suggested, and because this basis has commended itself to the judgment of, and has been adopted by, the courts upon whom duties of apportionment of this nature have been imposed in like cases, the Master was justified in following their decisions and his action and report in this regard is confirmed.

Ames v. Union Pacific R. R. Co. (C. C.), 64 Fed. 165, 179;

Chicago, Milwaukee & St. Paul Ry. Co. v. Tompkins (C. C.), 90 Fed. 363, 370;

St. Louis & S. F. Ry. Co. v. Hadley (C. C.), 168 Fed. 317, 348-352;

Northern Pacific Ry. Co. v. Keyes (C. C.), 91 Fed. 47, 56, 57;

In re *Arkansas Railroad Rates* (C. C.), 163 Fed. 141, 142;

Missouri, Kansas & Texas Ry. Co. v. Love (C. C.), 177 Fed. 493, 497."

Defendant's contended before the Master that apportionment of value might fairly be made on either

the operating expense basis or the revenue basis, but changed position after the Master made his report showing results on both bases, and contended before the Circuit Court that apportionment of total value between the freight department and the passenger department might be made on either of two bases: (1) by the aggregate number of ton miles and passenger miles of the respective classes, or (2) by the aggregate number of car miles and engine miles of these classes (see exception III, p. 323, et seq., Vol. 1 N. P.), and they contended that the total freight valuation should be apportioned between intrastate and interstate on the straight ton mileage basis (p. 326.)

In apportionment of the total passenger valuation between the intrastate and interstate business, the result is practically the same on the revenue basis as on the passenger mile basis, and defendants seem to make no objection against the Master's apportionment of the passenger valuation between the intrastate and interstate business.

If defendants' contention before the Circuit Court be allowed, there will be assigned to the intrastate freight business a percentage of the total *less than one-half that they conceded to be correct and contended for before the Master.*

At page 327, Vol. 1 N. P. case, they contend that only 8.07 per cent of the freight valuation should be assigned to the intrastate business on the Great Northern road, whereas the operating expense basis would assign 17.99 per cent, and, at page 328, Vol. 1 N. P. Case, they contend that only 12.33 per cent of the total freight valuation should be assigned to the intrastate freight business on the Northern Pacific road,

while 25.36 per cent thereof would be assigned on the operating expense basis.

A division of the freight operating expenses between the intrastate business and interstate business on the straight ton mile basis would be unfair, for many reasons, some of which we shall hereinafter enumerate.

The ton mile basis has been rejected, and the revenue basis has been adopted by the courts.

In *Love et al. vs. Atchison, Topeka & S. F. Ry. Co., supra,* the Court of Appeals said: (185 Fed. 328)

> "Each railroad company was entitled to a fair return upon the value of its property in Oklahoma devoted to the public use. What return it actually received and what it would probably continue to receive under the fare and the rates in question was ascertainable only by finding what percentage of the value of its Oklahoma properties devoted to its intrastate passenger business in Oklahoma and what proportion of the value of its Oklahoma property devoted to its intrastate freight business in Oklahoma the respective net incomes from those classes of business were and would be. But the Oklahoma property of each of these companies was used in common to transport passengers and freight in both interstate commerce and intrastate commerce, hence it became necessary for the court below, after it had found the value of the Oklahoma property of each of the companies to divide that value on the most equitable and available basis between its interstate business and its intrastate business and between its passenger business and its freight business, and complaint is made that it apportioned this value on the revenue basis, that, for example, it assigned to the intrastate business in Oklahoma such a proportion of the value of its Oklahoma property devoted to

the public use of transportation as the gross earnings of its intrastate business in Oklahoma bore to the gross earnings of all its business in Oklahoma.

The only other basis of division that was available under the evidence in this case was the ton mile and passenger mile basis, to assign, for example, to each company's intrastate business in Oklahoma such a portion of the value of its property in that state as the aggregate ton miles and passenger miles in the intrastate business bore to the aggregate ton miles and passenger miles in all its business in that state and the real issue between these bases therefore was whether the apportionment of the value of the property should be made on the basis of the value of the use of it or on the basis of its use without regard to the value thereof.

The former method seems to be the more reasonable and equitable. Capitalization is founded on the worth of use, not on mere use alone. The value of property, of investment in every form, is measured by the value of its use, not by its use divorced from the value thereof. Railroad rates are founded primarily on the worth of the use of the railroad machine by the various classes of freight and by the passengers and not on the amount of the use only. The rate for hauling a ton of merchandise of the first class one mile is not many times the rate for hauling a ton of merchandise of one of the lowest classes the same distance because the former ton uses the railroad property many times as much as the latter, but because the use by the former is worth more than the use by the latter.

There is no unit of measurement between ton miles and passenger miles. The ton mile and passenger mile basis gives no effect to the pregnant differences between classes of loads,

or between the distances they are hauled. It is inapplicable to the assignment of values to the mail, express and miscellaneous business. In fact there is no proportioning or measuring relation between the various uses of property and its value when no regard is given to the values of the uses.

On the other hand, the values of the uses of property, which its gross earnings substantially represent, present a natural and logical basis for apportioning its value to these uses. Cases may indeed be imagined, one of them was suggested by Mr. Justice Brewer in *Chicago, Milwaukee & St. Paul Ry. Co. v. Tompkins*, 176 U. S. 167, 176, and many others of a similar character have been presented in the briefs of counsel, in which the results obtained upon this basis from the particular facts assumed do not seem to be perfect.

But no basis has been suggested that produces a perfect result. It may be that none exists that will produce such a result in all cases. But the facts that the ton mile and passenger mile basis has no common unit of measurement, that it excludes the effect of the differences in the classes of freight and in the distances it is hauled which are reflected in the revenue basis, that there is no proportioning or measuring relation between the value of property and its uses divorced from their values, that the revenue basis appeals more persuasively to the reason than any other suggested and has commended itself to the judgment of, and has been adopted generally by the courts upon whom duties of apportionment of this nature have been imposed in like cases, have convinced that the court below committed no error by its use.

Ames v. Union Pacific Ry. Co., 64 Fed. 165, 179;

Chicago, Milwaukee & St. Paul Ry. Co. v. Tompkins, 90 Fed. 363, 370;

St. Louis & S. F. R. R. Co. v. Hadley, 168 Fed. 317, 348-352;

Northern Pacific Ry. Co. v. Keyes, 91 Fed. 47, 56, 57;

In re *Arkansas Railroad Rates,* 163 Fed. 141, 142."

In *M. K. & T. v. Love, supra,* the Circuit Court said: (177 Fed. 497)

"When the railroad within the state is used in both interstate and local commerce it is necessary next to determine what part of its value should fairly be considered as devoted to each use separately, because obviously the company should not exact such excessive rates for local traffic as will also produce a return upon a value employed in a business over which the state has no control.

Neither class of traffic, interstate or local, should be made to bear a burden caused by paring the rates on the other to the quick. It is generally agreed that, given the entire value of the railroad property in the state, it is fair to apportion it among the different kinds or classes of business upon a revenue basis, that is to say, in proportion to the gross revenue produced by them respectively. And a like rule applies when the questions involved require separate consideration of the freight and passenger business. In this way will be found the fair proportion of value devoted to each particular use, upon which the owner is entitled for such use to a reasonable return.

Counsel for defendants object to this method of assigning values, and the observations of Mr. Justice Brewer in the Tompkins Case, 176 U. S. 175-177, 20 Sup. Ct. 336, 44 L. Ed. 417,

are quoted to show its inaccuracy under stated conditions. But it seems to have been adopted by him previously in the Nebraska Case (*Ames v. Union Pacific Ry. Co.* C. C., 64 Fed. 165, 179, affirmed in *Smyth v. Ames,* supra) and by the courts generally in subsequent cases.

Moreover, it is not perceived that the ton mile basis advocated in its place is free from similar criticism. The number of tons hauled one mile has no bearing upon the value of the property employed save as revenue is produced, and when that element is recognized we are at once at the revenue basis. The ton mile could not be used in the necessary assignment of values as to mail, express, and miscellaneous services, nor as between passenger and freight traffic. Passengers are not transported by weight, and the passenger mile and the ton mile as units of measurement cannot be reduced to a common term.

In these cases, therefore, the total value of the railroad property in Oklahoma of each complaining company, viewed in all its aspects, should be apportioned according to the rule mentioned, and assigned separately to interstate and local business, to freight and passenger business, and to mail, express and miscellaneous business, so the effect of the contested rates may be ascertained."

In *Ames v. Union Pacific Co., supra,* at page 179, Mr. Justice Brewer said:

"In order to determine this (the reasonableness of the rates) we must ascertain what it costs to carry this local freight, *what the receipts have been therefrom,* and what reduction will be made in such receipts by the application of this act, *and then we must take such proportion of the gross investment in the roads as the present earnings from local freights bear to the total*

earnings of the road. From these computations, we may see whether the reduction made by this act in the local freights, if applied to all the company's business, would leave any compensation to the owners, and, if so, how much."

At page 187 of the opinion, he applied the rule just stated. He said:

"The present value of the Union Pacific Railway property in the state, at the sum named in this concession, would be $9,340,000. To pay 6 per cent on this conceded value would require, as its contribution to the earnings from the local freight, $42,030. Or, in other words, upon the conceded value, the local freight earnings, as reduced by house roll 33, *would have paid but their proportionate share of 8 per cent interest.* If a proportionate reduction in rates was made by other states and by congress (and, of course, such a reduction would be equally within their power), *so that the total net earnings of the road would be but 8 per cent on this conceded value,* obviously only the holders of the first lien would receive full interest on their indebtedness, while the holders of subordinate liens would receive but a fraction thereof. All the stockholders would go without compensation, and soon their investment be swept away by foreclosure proceedings."

And again the application was made to another road. Continuing, Mr. Justice Brewer said:

"Take the same process of computation, and apply it to the only other company which would have any amount of earnings under the reduction caused by house roll 33, to wit, the Burlington & Missouri River Railroad in Nebraska. Beyond the statement in Exhibit 23 of the capital stock and funded debt per mile of the Chicago, Burlington & Quincy Company,

which owns and operates the Burlington & Missouri River Railroad, we have, from the testimony of its auditor, the exact amount of mortgage indebtedness resting upon the road within the limits of the state, and the amount of interest charges due therefrom, to wit, an indebtedness of $45,268,992.80, and interest charges for the year 1892, $2,224,171.17. *The amount received for local freight was about 16 per cent of the total amount realized on all business done in the state, as appears from Exhibit 4.* Sixteen per cent, therefore, of this interest, should have been earned by the local freight. Sixteen per cent is $355,867. But the table shows that the net earnings therefrom, under the rates prescribed by house roll 33, for that year, would have been only $77,617—not a fourth of the amount which it should contribute to the payment of such interest."

In *St. Louis & San Francisco Ry. Co. vs. Hadley*, 168 Fed. 317, the computations appearing at page 329 *et. seq.* of the opinion are based upon an apportionment of value to the different classes of business on a revenue basis.

For example: Take the St. L. & S. F. Ry. Co., at page 323, its valuation is shown to be $61,238,417.70 At page 168 the intrastate freight earnings are shown to be 14.36% of all earnings, and the intrastate passenger earnings are shown to be 14.79% of all earnings. At page 329, in the table which shows the earnings and apportioned valuation, return on value, and interest charge, these percentages are applied to valuation and the net earnings for the period of three months compared with 6% interest on the assignable portion of the value of the property for that period.

At pages 348 to 352 of the opinion there is a discussion of the relative merits of the revenue basis and of the ton mile basis for the division of operating expenses between the two classes of business intrastate and interstate. What is there said in favor of the revenue basis for such division applies with some force to the propriety of using gross earnings as the factor for apportionment of value to the different classes of business.

In *Smyth v. Ames,* 169 U. S. 466, the precise point was not discussed, but the findings and decree of Mr. Justice Brewer at Circuit were affirmed in all respects.

In *Chicago, Milwaukee and St. Paul Co. vs. Tompkins,* 90 Fed. 363, at page 370, the Court, having apparently overlooked what was said by Mr. Justice Brewer in Ames v. Union Pacific, supra, said:

> "No court as yet has promulgated any rule as to how this court shall arrive at a true and just valuation upon which to figure local earnings. In the absence of any such rule, this court believes that it is fair and just to first ascertain what per cent of the total gross earnings in any one year the total local earnings for that year, and, having ascertained that per cent, to take the same per cent of the total value of the property as a fair value upon which to fix local earnings."

The court then attempted to apply the rule as follows:

> "Following out this rule, let us take the four fiscal years immediately prior to the institution of this suit, *and ascertain what per cent the local earnings for these years would have earned upon a valuation thus determined.* (It will be noted

that he uses the *total* local earnings and not the *net* local earnings after deducting operating expenses and taxes) and what reduction of that percentage will be made by the schedule sought to be promulgated by the defendants, and which it is stated reduces the present tariff of complainant, speaking in round numbers, 15 per cent on local passenger business, and 17 per cent on local freight business.

The total earnings from all sources of the complainant company on its lines in the state of South Dakota, for the fiscal year ending June 30, 1894, were $1,840,651.79. *The total local earnings* for freight and passenger services during the same period were $407,606.35. In round numbers, this would make the local earnings 22 per cent of the gross earnings from all sources for the year 1894.

Twenty-two per cent of $10,000,000, the value of complainant's property in the state of South Dakota, would be $2,200,000.

The local earnings for said year, stated above as $407,606.35, using round numbers, would be 18.5 per cent on said last-mentioned sum."

In like manner the results of the year ending June 30, 1895, were considered, the local earnings being 26% of all earnings. Twenty-six per cent of $10,000,000 would be $2,600,000, and the total local earnings would be 12.7% of that sum.

In like manner the results of the fiscal year ended June 30, 1896, were considered, and it is found that such total local earnings were 15.6% of the assigned value, and in 1897, 16.3% of such assigned value.

The substance of the Court's finding therefore was this:

He apportioned the total value to the intrastate business, by taking such percentage of the value as the

intrastate earnings were of the total earnings, and he then ascertained what percentage of the value so assigned was the total *gross* local earnings (instead of ascertaining what the net local earnings were after deducting proper operating expenses and taxes chargeable thereto.)

He then ascertained what the total gross intrastate earnings would have been if the rates complained of had been in effect.

By his 9th finding of fact, quoted in the opinion of this court at 176 U. S. 171, 177 he said:

> "That the court is unable to find from the testimony what the actual cost of earning the local earnings for the fiscal years ending June 30, 1894, 1895, 1896 and 1897 was."

At page 372 of his opinion, 90 Fed., he said:

> "The court has not overlooked operating expenses, or the difference between the cost of earning local and interstate earnings; but the court is of the opinion that, when the local earnings under complainant's schedule show for the years 1894, 1895, 1896 and 1897 a percentage on capital invested of 18.5 per cent, 12.7 per cent, 15.6 per cent, and 16.3 per cent, respectively, and for the same years under defendants' proposed schedule a percentage of 18 per cent, 12.1 per cent, 15.3 per cent, and 16.2 per cent, then the small reduction, taken in connection with the high percentages earned under it, makes it unnecessary to discuss what the exact amount of the profits would be. This being the view of the court, it necessarily results that the bill must be dismissed, and the temporary restraining order granted in this action dissolved."

It is apparent that the Circuit Court in the Tompkins case *did not apply the rule* stated by him, as above quoted, in any proper way, because he applied to the value assigned to the intrastate business the *gross earnings* from that business instead of ascertaining the *net earnings* and dividing that amount by the assigned value.

This court in its opinion at page 174 clearly pointed out that the findings made by the lower court were not "sufficient to warrant a conclusion upon the question whether the rates prescribed by the defendants were unreasonable or not, and we are also of opinion that the process by which the court came to its conclusion is not one which can be relied upon."

It was further said:

> "Now, it is obvious that the amount of gross receipts from any business does not of itself determine whether such business is profitable or not. The question of expenses incurred in producing those receipts must be always taken into account, and only by striking the balance between the two can it be determined that the business is profitable. The gross receipts may be large but if the expenses are larger surely the business is not profitable. It cannot be said that the rates which a legislature prescribes are reasonable if the railroad company charging only those rates finds the necessary expenses of carrying on its business greater than its receipts."

It was shown that the cost of doing business would remain substantially the same after as before the reduction complained of.

At page 175 attention is called to the manner of assigning a proportionate value to the intrastate business and to the percentages arrived at in the four years respectively on the basis of the revenue as it was and as it would have been if the rates had been reduced by the application of the schedule complained of.

At page 176 it is stated that the passenger fares were reduced 15% and the freight rates 17%, and that the lower court reached the conclusion that the earning capacity for the last year was diminished only 1/10 of 1%, that is, the total gross local earnings were 16.3% of the assigned value and would have been 16.2% of such value if the rates so reduced had been in effect. And this court says, "such a result indicates that there is something wrong in the process by which such a conclusion is reached."

Thereupon, by simple illustrations, *it was shown what results could be produced by arbitrarily assuming widely different relations between gross intrastate earnings and gross interstate earnings, wholly ignoring operating expenses.*

The first example was a valuation of $10,000,000, total receipts from interstate and local were $1,000,000, one-half from each; and it was shown that the method pursued by the Circuit Court would have produced the result that the earnings from each class was 10% of the value assigned to each class.

The next example was: Let the interstate receipts remain unchanged and reduce the local *to one-fifth* of what they were. The results then would be that 5/6 of the total valuation would be assigned to the interstate business and only 1/6 to the local business, and still

the local gross receipts would be 6% of the assigned value: that is, while gross local receipts were reduced to 1/5 of what they were, "the earning capacity is 3/5 of what it was," that is, the percentage to assigned value is 3/5 of what it was; and it was shown that although the interstate receipts be undisturbed the method of valuation produces "the same reduction in earning capacity in the property employed in the interstate business as in that employed in the local business in which the rates were reduced." This means the same reduction in proportion of the total gross interstate earnings to assigned value.

It is respectfully submitted that the illustrations employed in the opinion of this court are not at all analogous to the situation in the cases at bar, for reasons following:

(a) Operating expenses and taxes are stated in the cases at bar and subtracted from the gross receipts, and the net remaining is divided by the assigned value of the property to arrive at the rate of return.

(b) In the cases at bar, it has been shown that before the reduction neither the intrastate freight rates nor the intrastate passenger rates were *disproportionate when compared with the other,* and that the reductions here complained of were sweeping and similar in degree on both classes of business.

The appellants complain that the method assigns too great a value to the passenger business, but the reduced passenger rates, the reduced merchandise rates, and reduced rates to jobbing centers, the voluntary reductions on grain and coal were in effect and only the further reduction made by the Com-

modity Act were enjoined. The error, if any, was in favor of and not against the passenger business.

And further, if operating expenses had been taken into account in the illustration used in the decision of this court there would have been no net local earnings and therefore no return on the assigned value, because it is inconceivable that operating expenses would not exceed 1/5 of the local earnings (the example being that the local earnings were reduced to 1/5 of what they were.)

And still further, the assumption ignored any requirement that rates on and receipts from different classes of business should when compared with each other, be *relatively fair*, and ignored the fact, as stated in the exception above quoted, that difference in rates is theoretically founded on the difference in the cost of the service (as conceded here at p. 357 Appellant's brief).

And finally, the opinion does not condemn the revenue basis for the apportionment of the total valuation to the various classes of business as a step to ascertaining the net return yielded by each class as applied in the cases at bar, and notwithstanding the case was remanded with instructions to refer the same to a competent Master to report fully the facts and proceed upon such report as equity shall require, no basis for the apportionment of total valuation to the different classes of property was given in the opinion.

The case was again considered in the same Circuit Court under the title Chicago, Milwaukee & St. Paul Ry. Co. v. Smith, 110 Fed. 473, and the rates complained of were enjoined.

It appears from the opinion, at page 474, that the

fiscal year ended June 30, 1897, was taken as the test year. The Master found net local freight earnings, net passenger earnings, net mail, etc., earnings, and total net earnings. He also found what such net earnings would have been if the rates complained of had been in effect.

He found the annual interest charge on the bonded indebtedness and the value of the company's property therein, and that if the rates complained of had been in force the net total earnings would have only paid $180,389.02 interest, leaving a deficiency in the amount due of $921,360.91. The Circuit Court said, at page 475:

> "There seems to be no good reason why interstate and local business should not be charged with the interest on the South Dakota indebtedness in proportion to the amount of annual net revenue produced by each. There is so little difference between the amount of the annual net local earnings and the annual net interstate earnings that for all practical purposes the local earnings should be charged with one-half of the annual fixed charge for interest, or, in round numbers, $550,874.96."

It was held that the company was entitled to earn sufficient to pay the interest on the bonds, but it also appeared that the bonds exceeded $19,000,000 and the value was only $15,000,000, but that the net earnings were not nearly sufficient to pay interest upon the value at the average rate borne by the bonds.

From the foregoing it appears that the interest charge on bonds covering the total property was apportioned on the basis of *net earnings*.

The opinion does not show what the percentage of operating expense to revenue was in the interstate busi-

ness or in the local business. If such percentage was the same in one as in the other then manifestly a division of the total interest charge or of the total valuation on the net earnings basis would be arithmetically the same as if it were made on the gross earnings basis.

It cannot be said that the Circuit Court understood that this court in its opinion condemned as unsound the apportionment of the total valuation to the different classes of business on the gross earnings basis *as a step in the ascertainment of the rate of return yielded by each class of business upon the value of the property chargeable thereto.*

The bases suggested by the defendants for apportionments of value in their exceptions to the Master's report are unsound.

Ton Miles and Passenger Miles Basis.

Defendants say: (p. 325, Vol. 1 N. P.)

> "* * we shall insist on the division (apportionment of value between freight and passenger) being made on the relative ton and passenger miles * * *."

That is to say, take the total of the ton miles and the passenger miles and assign to the freight department such proportion of the total value as the ton miles is to the total of both, and to the passenger department such proportion as the passenger miles is to the total of both.

A ton mile and a passenger mile are not alike. It costs more to produce a passenger mile than it does

a ton mile, and the schedules complained of allow more, on the average, for passenger miles than for ton miles. These units are not similar. They have no common element, unless it be distance. It is certain that there is no identity in the amount of the use of railroad property required to produce a passenger mile with the amount of use required to produce a ton mile of any kind, whether it be of ore or coal or silk or milliner's plumes. Weight, bulk, perishability and value are elements which enter into every freight rate. These elements vary, and cannot be classified as between different kinds of freight. They do not enter into the making of a passenger fare. There is no method of reducing freight ton miles and passenger miles to a common basis and therefore no just apportionment can be made on this basis.

Car Miles and Engine Miles Basis.

The relation of the passenger engine and car miles and the freight engine and car miles, respectively, to the total of all engine and car miles was contended for by the defendants before the Circuit Court as a basis for the apportionment of value between freight and passenger.

Defendants in exception III (p. 325, Vol. 1 N. P.) state:

> "Again the passenger car miles, and the freight car miles are a good test of the relative use. The relation differs but slightly from the ton and passenger mile relation. If the passenger engine miles were added to the passenger car miles in intra service, and freight engine miles were added to freight car miles before making the comparison it might be fairer."

The objection to this scheme rests on the fact that a train mile is—and a car mile is not—a unit of performance. Cars do not run over the track alone, and, as a general rule, locomotives do not. The whole purpose of the railway organization is to move trains. These are single track roads. The right of passage must be given whether the train consists of an engine and one passenger coach or whether it consists of an engine and 59 freight cars. The size of the crews is the same in either case. Taking the two examples just stated, the passenger engine added to the passenger car produces 2. The freight engine added to the 59 freight cars produces 60. The sum of both is 62. If these trains move, we will say, from St. Paul to Minneapolis over tracks and right of way worth millions of dollars, the method of division suggested would assign 60/62 or 30/31 to the freight train, and 2/62 or 1/31 to the passenger train; that is to say, one such freight train would be charged with 30 times as much of the value of the property as one such passenger train.

The report of the Great Northern Company (Vol. 1 G. N. case) states the average number of cars per passenger train and the average number of cars per freight train. Such averages are: Passenger, 5.03 cars, Freight, 38.46 cars. Assuming that each train has one engine the combined average would be: Passenger 6.03, Freight 39.46.

Defendants' method is based on the assumption that one freight train uses the property as much as six or seven passenger trains.

This assumption is not justified.

Passenger trains are the higher class of trains and

have precedence over freight trains which must sidetrack and wait for the passage of passenger trains. Passenger trains require better tracks, with elevations and adjustments at curves to insure safety at high speed. These elevations and adjustments are not suitable for slower freight trains and a greater wear and tear results. The speed of passenger trains is an important factor. The average distance travelled per day by passenger trains is much more than that travelled by freight trains. The passenger train uses the most expensive terminals, depots and facilities owned by the company. All of these elements should be charged to the passenger train wear. None of them would be taken into account by defendants' method of apportioning value on the combined engine and car mile basis.

Ton Mile Basis.

Defendants' exception IV, pages 325 Vol. 1 N. P., relates to the division of value of property between the intrastate and interstate business, both passenger and freight. It is stated: (pages 325, 326.)

> "Such division should be made in proportion to the use made of the property by each of the classes. The Master has assumed to make this division also, on the basis of the relative gross earnings, but that basis is clearly unfair to the intrastate business. It appears from the evidence and is found by the Master that the intrastate ton mile revenue in this State is greater than the interstate ton mile revenue.
>
> In the Great Northern case (53—Ward) the intrastate ton mile freight revenue is as compared to interstate, as 2.03 to 1. In the Northern Pacific case the relation is 1.43 to 1. (80—Elliott.)

> Under these circumstances a division of the value of the Great Northern property used in the freight business in this State, between interstate and intrastate on the gross earnings basis assigns to the intrastate business, in proportion to its volume, more than two dollars of such value, for each dollar assigned to interstate. To illustrate, if all the business were freight, and the ton miles of inter and intra business were equal, the intrastate revenue on the Great Northern would be a little more than twice the interstate revenue. A division of the value of the property employed in the business, between the two classes on the gross earnings basis would, in such case, assign to interstate business, and require it to earn a dividend on only one-third of the value, intrastate business would be required to earn a dividend on two-thirds, which would be manifestly absurd."

It is obvious that the cost of production of one ton mile in one class of traffic and under one set of circumstances is very different from what it may be in another class of traffic and under other circumstances. The length of the haul is an important factor.

That ton miles are not alike, *except in name*, is known to everyone familiar at all with railroad operation or accounting. Let us give a few examples:

Exhibit 53 Ward, G. N. Case, Vol. 6, shows that the average revenue per ton per mile of the intrastate freight business in Minnesota is 1.381 cents; of all business in Minnesota 0.737 cents—the relation of revenue being as 2.03 to 1.

The Mesabi division of that company extends from the Iron Range north of Duluth to the ore docks at Superior, Wisconsin. The ore is interstate business.

The average revenue per ton per mile on that business is 0.406 cents. Its average haul is 111.7 miles. There is no class of business intrastate in Minnesota at all comparable with this ore business, and it is the principal and dominating traffic of the Mesabi division. If the operations of that division be omitted the Minnesota intrastate business produces on the average per ton per mile 1.36 cents, the interstate 0.863 cents, the former being decreased and the latter increased by the omission of the ore and other business of the Mesabi division. The *relation* of revenue is as *1.72 to 1* instead of as *2.03 to 1*.

The average haul of the intrastate business, excluding the Mesabi division, is *116.9 miles*, of the interstate business touching Minnesota the average haul is *621 miles*. On all business the average haul intrastate in Minnesota is *113.3 miles;* interstate touching Minnesota *411.8 miles*.

It appears therefore that the relation of average haul of intrastate business to the average haul of the interstate business is as *113.3* is to *411.8*, and if the Mesabi division be omitted it is as 116.9 to 621. As the distance increases the revenue decreases per ton per mile.

Exhibit 22 Tittemore gives the rates per ton per mile for each class in the Commission's schedule of September 6, 1906, and extends the rates on the principle on which they are made, to a distance of 660 miles. Let us take the first class for an example:

For 115 miles (the average intrastate haul Great Northern in Minnesota all business is 113.3 miles) the Commission schedule allows 58.4 mills; for 420 miles (the average Great Northern interstate haul in Min-

nesota all division is 411.8) the Commission allows only *33.7* mills; for 620 miles (and the average Great Northern interstate haul, excluding the Missabe division is 621 miles) the allowance would be only 26 mills.

But ton miles are not all produced by hauling freight in the same class, and it is therefore right to compare the rates allowed by the State in the orders of the Commission and the acts complained of for different classes. The rate per ton per mile allowed for soft coal hauled 115 miles is 7.39 mills compared with 58.4 mills for first class. For 420 miles there is allowed for soft coal only 4.1 mills, and if the schedule were extended to 620 miles on the principle on which it is made there would be allowed only 3.1 mills.

The schedule of rates made by the State recognizes that it is worth more to produce one ton mile than another and that, other things being equal, as distance increases the allowance per ton per mile should decrease.

Exhibit 80 Elliott shows that the Northern Pacific average haul is, intrastate 104, intrastate touching Minnesota 485 miles; that on the average the relation of revenue per ton per mile is, intrastate 140 to interstate 100. If the revenue per ton per mile allowed in the schedules complained of for 104 miles be compared with the revenue per ton per mile allowed for 485 miles the relations will be as follows:

Merchandise	204 to 100
Coarse grain	304 to "
Wheat and lumber	304 to "
Hogs	270 to "
Cattle	266 to "

Soft coal..... 216 to 100
Hard coal..... 214 to "

The apportionment of the value assigned to the total freight business between the intrastate and interstate freight business on the straight ton mile basis would give to a ton mile of soft coal hauled on the Great Northern road 620 miles for an average of 3.1 mills per ton per mile, the same value as a factor of division as a haul of first class merchandise 110 miles for which is allowed 59.2 mills per ton per mile, or the same value as a ton mile which takes a rate of four times first class, of which a very considerable quantity moves (see Exhibit 21 Tittemore Vol. 6, St. Louis case) or 236.8 mills per ton per mile for a haul of 110 miles. In other words, the ton mile of soft coal would have the same potency in apportioning value as the ton mile of high class merchandise producing more than 76 times as much as the allowance per ton per mile for the soft coal.

The results arrived at by the methods suggested by appellants for the apportionment of value to the different classes of business are such as to condemn such methods as inappropriate and unsound.

One of the solicitors of the defendants, in a printed brief submitted to the Circuit Court, a copy of which was furnished to us, stated the results he reached in the Northern Pacific Case and in the Great Northern Case from the use of the suggested combined engine and car mileage basis for apportionment of total value between the freight department and the passenger department. (See also Appellant's Brief herein, p. 363 et seq.)

His results are as follows:

Northern Pacific case, 13.6% to the passenger department and 86.4% to the freight department. (Brief page 29.)

Great Northern case, 12.6% to the passenger department and 87.4% to the freight department. (Brief page 27.)

The Master's results on the revenue basis are as follows:

Northern Pacific case, 26.3% to the passenger, and 73.7% to the freight department;

Great Northern case, 21.4% to the passenger, and 78.6% to the freight department.

The Master's basis—revenue—charges each dollar of gross revenue with the same amount on account of the use of the property whether the dollar is earned in the passenger department or in the freight department. There is no reason *in these cases* why a

dollar paid by a passenger should not bear as great a share of the property charge as a dollar paid for the transportation of freight, or vice versa.

Defendant's combined car and engine mileage basis does not charge the average dollar earned in the passenger business with as much on account of property use as it does the average dollar earned in the freight business.

For example: In the Northern Pacific case the share charged to the passenger business on the equal basis of revenue is 26.3%. On defendant's basis it is only 13.6%, or about 51% of its fair share.

The equal share to be borne by the freight business on the revenue basis is 73.7%, but defendants' basis assigns 86.4%.

In the Great Northern case the equal share of the passenger business on the revenue basis is 21.4%. The defendants' basis assigns only 12.6%, or about 58% of its fair share.

The equal share of the freight business on the revenue basis is 78.6%. Defendants' basis assigns 87.4%.

The following is quoted from pages 31 and 32 of the brief above referred to:

> "For convenience in making the computation, we will divide the value of the property employed in the passenger business equally, assigning to
>
> | | |
> |---|---|
> | Intra passenger..... | $8,720,293 |
> | Intra freight, supra..... | 9,963,465 |
> | Total intra value..... | $18,683,758 |

(Excessive apportionment by Master on gross earnings basis, page 118.)

Intra passenger	$14,243,633
Intra freight	16,442,200
Total intra value	$30,685,833

The intrastate freight on the Northern Pacific for 1908 (54 Johnson) was 12.33% of Minnesota freight, while the intra gross earnings were 16.35% of Minnesota freight earnings. The application of the former percentage to the value assigned to freight, supra, would give

To intrastate freight	$9,612,196
To interstate freight	68,314,532

Dividing passenger value on passenger miles (80 Elliott) 34% intra, gives:

To intrastate passenger	$4,171,057
To intrastate freight, supra	9,612,196
Total intra value	$13,783,253

As found by Master:

Intrastate freight	$10,867,837
Intrastate passenger	8,159,782
	$19,027,619"

It will be noted that in the Northern Pacific case the revenue basis assigns to the total intrastate business $30,685,833. Defendants' solicitor assigns only $18,683,758, or about 60.8%.

If it be assumed that on the average each dollar of gross revenue over and above operating expenses and taxes yields 30 cents as a return for the use of the property, the apportionment of value as made by the Master will, on the average, charge each class of business 30 cents out of each dollar for the use of property.

The operating expenses and taxes chargeable to each class being ascertained and deducted from the gross revenue leaves the net, which divided by the value assigned thereto gives the rate of return thereon, and this may be compared with the average rate of return on all business, being the equivalent of 30% of the gross earnings.

The defendants' method however would charge only about 18 cents to the intrastate business, 30 cents being the average charged on all, and 108% of 30 cents or about 32.4 cents would be charged to the interstate business.

On defendants' basis for apportioning value to the different classes of business, if operating expenses and taxes chargeable to each be deducted from gross and 18 cents on the average net out of each dollar of intrastate revenue remain against 32.4 cents out of each dollar of interstate revenue, *the same rate of return on value will be shown on both classes of business, because of the unequal apportionment of value.*

The defendants, in their exception above referred to, compare the results on each basis employed by the Master with their own claim as follows: (Vol. 1, page 327 N. P.)

Great Northern case, intrastate freight business, defendants' basis 8.07%, revenue basis 15.11%, operating expense basis 17.99%.

Northern Pacific case, intrastate freight business, defendants' basis 12.33%, revenue basis 16.35%, operating expense basis 25.36%.

If to produce a dollar on the total business, or in the freight department or in the passenger department, or in the intrastate or interstate of either, it costs 70 cents

in labor, supplies and for maintenance of the property, it would seem to us not to be unfair to find that the *use of the property* is the same on the average for the production of a dollar in all such classes of business,—and generally, it does not seem to be unfair to find that the expenditure incurred in the production of any given class of revenue fairly well measures the use of the property therefor.

The defendants' basis, *as urged in the Circuit Court* however rests on these assumptions:

(1) That on the average the production of a ton mile uses the property to the same extent as does the production of a passenger mile;

(2) That on the average the production of a ton mile of the interstate business, in which the average length of haul is, say, 500 miles, uses the property to the same extent as does the production of a ton mile of intrastate business in which the average length of haul is only, say, 100 miles.

If defendants are right, the expenditure of two dollars of operating expenses requires on the average in the intrastate freight business less use of the property than does the expenditure of one dollar of operating expenses on the average in the interstate freight business on the lines of the Northern Pacific and Great Northern.

Defendants' position before the Master was that value may properly be apportioned on the basis of operating expenses or revenue. The Master stated results on both bases. Defendants' position before the Circuit Court is untenable.

The question is one of fact, not of theory.

Did the Master assign too much of the total value of the property to the intrastate business, freight or passenger?

All of the reduced rates complained of were in effect in 1908, excepting the commodity rates under Chapter 232 of the Laws of 1907.

Defendants contend that the Master assigned too much of the total value to the passenger business as a whole, and too much thereof to the intrastate business.

Exception III (p. 325, Vol. 1 N. P.) states:

> "* * * The Master divided the value between the two branches on a flat revenue basis, but has divided the cost on another basis, which assigns a still greater proportion of cost to the passenger business. The passenger business, therefore, is charged with more than its share of the value of the property, and also with more than its share of the cost."

The contention that too much value has been assigned to the passenger department cannot be sustained, unless the two cent passenger fares are too high when compared with the freight rates in effect at the same time.

It cannot be claimed that the passenger fares of two cents per mile are *relatively* too high because:

(1) After the passage of the two cents passenger fare law, Chapter 97 Laws 1907, approved April 4th, 1907, the same legislature still further reduced freight rates by Chapter 232 Laws 1907, approved April 18th, 1907, *thereby determining that existing rates on the commodities were relatively too high.* These rates never

having been put into effect, the revenue produced by the higher freight rates was used by the Master in making the apportionment of value between the freight department and the passenger department; and,

(2) Passenger fares lower than two cents per mile have never been prescribed anywhere, and no two cents passenger fare law has ever been sustained by any court, but such fares have been adjudged too low in other States where population and passenger traffic are much denser than in Minnesota.

Nor can it be claimed that the Master assigned to the intrastate passenger business too much of the total passenger valuation, because the interstate fares in Minnesota were also on the basis of two cents per mile. The cost per passenger per mile of the intrastate business is more than that of the corresponding interstate business, because the average intrastate haul is shorter than the corresponding interstate haul, and two terminal services in the State must be given to each intrastate passenger, while sometimes none and never more than one is given to the interstate passenger. Indeed, it is shown by defendants' proof in each case that it costs more in Minnesota, on the average, to produce an intrastate passenger mile than it does to produce a corresponding interstate passenger mile.

(See Table 13 of Exhibit 3-M Hillman, Vol 9 N. P.; see Table 12 of Exhibit G Hillman, Vol. 5 G. N.; see Table 14 of Exhibit L Hillman, Vol. 5 St. L.)

It cannot now be contended by the defendants that the Master assigned too large a proportion of the total value to the freight business as a whole, because they contend that too much has been assigned to the passenger business. It will be contended, we assume,

that too large a part of the freight valuation was assigned to the intrastate freight business.

It is fully shown, in Subdivision 4 of Section V of this brief, that *before* the reductions complained of were made, the intrastate freight rates in Minnesota were fair when compared with the interstate freight rates therein. In the autumn of 1906, the intrastate merchandise rates were reduced from 25 to 20 per cent; the rates on coal and grain were reduced 10 per cent, while the Commission had the commodity rates under consideration. In May 1907, the merchandise rates to jobbing centers were reduced 13.58 per cent, and Chapter 232 of April 18th, 1907, effective June 1st, 1907, prescribed still further reduction of coal and grain rates, and also reduced rates on livestock and lumber, the average reduction on all being 7.37 per cent. The enforcement of this Act was enjoined.

The proof makes it plain that in 1908 the reduced intrastate freight rates were too low when compared with the corresponding interstate rates.

The Master's apportionment of the total freight valuation on the revenue basis, therefore, assigned too little value to the intrastate business, rather than too much.

V.

The value of the services rendered the public is greater than the rates therefor in effect immediately before the making of the orders and laws complained of.

There is no ground in any one of these cases for a claim that the complainant stockholders or the company is not entitled to earn a full and fair return upon the value of the property used to render the services covered by the rates complained of, conceding, as we do (as stated in *Smyth v. Ames,* 169 U. S. 522, and quoted by the Master in his report, Vol. 1, page 217 Northern Pacific case,) that "what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth."

It may be readily shown that the services are worth more than the charges which were made therefor before the reductions were ordered.

It is true of transportation service, as of other service, that there is no absolute standard to measure its value. The reasonableness of a schedule of railroad transportation rates, like the reasonableness of charges for other service, may be satisfactorily determined by taking into account and giving due weight to the various circumstances and considerations affecting the question, among which are the following:

(1) The means employed to render the service, and cost attending its performance;

(2) The quality of the service rendered, the *relation* of the present to the former charges therefor compared with like *relation* of compensation for other kinds of service, and the relation of present to former prices of supplies and labor required in the performance;

(3) Railroad business is a public employment, and, while the services and charges therefor are subject to the regulation of public authority, rates ought not to be made so low as to impair the power of the companies efficiently to serve the public or to perfect or add to their property to meet present and future needs for better and more service.

(4) The amount of the rates or charges in question compared with others made for like service in the same general territory and under similar conditions.

1. The roads are well located and were built pursuant to public demand therefor, and are honestly, efficiently and economically operated.

Soft coal..... 216 to "

The Master's findings that "it is true of these lines of railway that they are efficiently, economically and honestly managed; that they have been located and constructed pursuant to a public demand, and that the public, rather than dispense with the service of any of them, can well afford to and will gladly pay such rates as will produce a full and fair return on cost of their reproduction * " cannot be successfully assailed.

Public authorities induced companies to build initial lines of systems in question.

The original lines in Minnesota of each of these systems were not only *built* but, as to the territory served by them, were *located* with the approval and encouragement of govermental authority, either national or state, as evidenced by land grants made on certain conditions as to location and time of completion to induce the construction of such lines.

The communities now served by these properties are entitled to efficient railroad service, and the history of the development of the resources and industries of the country indicates that in the reasonably near future these properties must be bettered and added to. There is not the slightest ground for the thought that they have been developed beyond the needs which they were created to serve.

At the time of the commencement of the construction of these systems in Minnesota, and for a long time thereafter, the state was sparsely settled and practically undeveloped,—for the most part a frontier. Railroads were essential to its growth and the need of railway transportation was much greater here than in the older and more thickly settled parts of the country.

The situation of the state and the people who were here was alluded to by Judge Lochren who granted the temporary injunction against the enforcement of the commodity rate act complained of. (Vol. 1, page 105, Northern Pacific case.) In the course of his opinion he says:

> "Now this is a matter in which the public has an interest, as well as the railroad companies and the stockholders of the railroad companies. Some of us older men can remember, in the early days, about the time when the state was admitted, the great anxiety that the people of the state had at that time that railroads should be brought into the state; that persons having capital should be induced to bring railroads into the state; that it was necessary for the prosperity and the upbuilding of the state that it should have railroad connections with the rest of the world; and that great and successful efforts were made to get large subsidies, in the way of land grants, from

congress; and that almost every community in the state, every village that had hopes of getting a railroad to it, counties, and all the municipalities were ready to vote, and did vote, bonds as subsidies, for the purpose of inducing men with capital to come into the state and build railroads. They could foresee that it was necessary for the advancement and prosperity of the state, to bring emigrants and others into the state, and change what at that time was a large waste into the sites of prosperous cities, thriving towns and villages and farms, and therefore to have railroads built giving them connection with the rest of the world; that there should be a way to take farm products, grain, cattle, hogs, everything that was produced by the farmer, in the quickest manner to the best market and to bring into the state commodities that were needed by its people. And that was done. Railroads were built. We have them. We see the effect of the railroads. And I think every one will admit that no institutions that we have had in the state have done so much to bring about the present state of prosperity, upbuild cities and cover the state with prosperous farms and with a large population, as the railroads."

The great need for transportation and the strength of the demand for railroad construction and the character of the inducements necessary to procure the investment of capital in so hazardous and unpromising undertakings as these were in the early history of Minnesota, have been recognized by the Courts of the state as a part of its well known early history.

In *First Division St. Paul and Pacific Ry. Co. v. Parcher*, 14 Minn. 224, the terms of the land grants of the predecessor of the Great Northern Railroad Company were under consideration. In the course of the opinion the Court said, (page 249):

"The charter granted in May, 1857, constituted a contract between the Territory and the Minn. and Pacific Railroad Co., one of the terms of which was that the lands granted in aid of the road should be exempt from taxation until sold and conveyed by the Company. That the exemption thus conferred is a contract right—a right which a legislature in the absence of constitutional inhibition is competent to grant, and inviolable—has been settled in a series of decisions by the Supreme Court of the U. S. so that the matter is not open to discussion. *State of N. J. v. Wilson*, 7 Cranch 164; *Gordon v. Appeal Tax Court*, 3 How 133; *Jefferson Branch Bank v. Skelly*, 1 Black 436, and cases cited."

At page 251 is the following:

"It is also urged by the defendants that the exemption from taxation was granted to the M. & P. R. R. Co. without consideration, and that therefore it does not come within the principle of the decisions of the Federal Supreme Court before cited but it is rather to be classed among the privilegia favorabilia spoken of in *Rector, etc., of Christ Church v. Co. of Phil.*, 24 How 300, and may therefore be revoked at the pleasure of the sovereign. We are of opinion that a sufficient consideration is to be found in the agreement of the Company to construct the road, and to fulfill the other duties imposed by the charter and among them to pay 3 per centum of the gross earnings of the road into the treasury of the Territory or future state."

At page 230:

"That it was necessary to hold out great advantages in order to induce parties to enter upon and prosecute the construction of the roads, is matter of history. The long delays and repeated

discouragements which the people of the state experienced in their attempts to secure convenient communication with the markets of the country are familiar to all."

And in *Minneapolis & St. Louis Ry. Co. v. Koerner*, 85 Minn. 149, 150, it was said:

"It has long been settled by the decisions of this state that the gross earnings tax law was not intended to change the character of the tax, but, for the purpose of certainty, was intended to change the method of computation. The amount required to be paid still remains a tax upon the railroad property, and not against the corporation. It is often referred to as the 'Commuted Tax.'

Another purpose of enacting the law referred to was evidently to induce capital to become interested in railroad building. The Legislature took note of the well-known fact that a new railroad in a new country might for some years be a matter of experiment, and in its first experience unprofitable; but that as the country through which it runs is settled and developed, the railroad business increases, and in proportion the Company becomes able to pay a higher rate of taxation. In its wisdom the Legislature adjusted the tax to those experimental stages as provided in the Act."

That the building of these systems was fully justified and that their lines are located where needed to serve the public is known and recognized by every one. The efficiency, honesty and economy of operation, will clearly appear from the facts called to attention in other parts of this brief. These properties are inferior to none in any of these respects.

Indeed, it is conceded in this country and abroad by everyone having familiarity with the subject that in efficiency and economy of operation that the railroads of this country stand in the first place.

Mr. W. M. Acworth, when during the present year he testified before the Railroad Securities Commission, was introduced by the Chairman of the Commission, President Hadley of Yale, as "the highest authority on the railways of Great Britain." He has frequently come to this country to study the transportation conditions, and is undoubtedly well qualified to form a just opinion. He said, in the New York Evening Sun of February 1, 1911:

> "It has always been my opinion that in actual economy of operation the railways of the United States are first in the world. In number of tons per car, cars per train; in the fullest utilization of locomotives; in the obtaining of the greatest measure of result for each unit of expenditure, they are not equalled by the railways of any other nation. * * * Your railways have reached a higher standard in international comparison than your farmers or your government, and under greater difficulties, for in England and on the Continent employment with a railway company is a prize and a man hopes to remain in the service of the same company throughout his life. He is, therefore, obviously more amenable to discipline than the shifting and often even foreign force employed on your railways."

Mr. James J. Hill, whose knowledge will be conceded, said:

> "The American railroad pays the highest wages in the world out of the lowest rates in the world, after having set down to capital account the low-

est capitalization per mile of all the great countries of the world."

Honorable Franklin K. Lane of the Interstate Commerce Commission, after returning from the International Railway Congress at Berne, Switzerland, in 1910, said:

> "The conference established beyond question, I think, the supremacy of the American railroad from the standpoint of efficiency. * * *
>
> Our railroading system is without parallel in the world because we are living as a nation and in Europe they live as communities. That accounts in part for the wonderful efficiency of the American railroad."
>
> (Chicago Evening Post, September 7, 1910.)

Statements of eminent authorities in commendation of the work of American railroads, of their enterprise not only to serve existing, but to build up new industries and open up to commerce vast undeveloped areas, of their engineering and mechanical triumphs, of their economies in operation, and of the quality of their service and the lowness of their charges to the public, could be quoted to great length, but the foregoing seems fairly representative of the general understanding of the best judges.

In all of these matters the Minnesota railroads involved in these cases are above the average, indeed, *"ahead of the times."*

(See Report of the State Commission, joined in by Appellants Mills and Staples, Dec. 31, 1904, pages 29-31 referred to, ante.)

In view of these facts, no question ought to be raised as to the right of these companies to charge suf-

ficient rates to yield *a fair and full* return upon the *present* value of the property used in Minnesota to render the service covered by the rates complained of.

It is certain that no lack of wisdom in the location or building of these lines, no want of skill, no extravagance in operation justifies an inference that the services covered by the rates complained of are not worth the former charges therefor.

The wholesale and sweeping reductions complained of cannot be justified by any of these things.

2. The services rendered are efficient. Rates have been reduced greatly from time to time. The cost of other service and of commodities generally—especially of labor and supplies required to operate railroads—has advanced greatly during recent years.

Heretofore in this brief (p. 8 et seq.) we called attention to many reductions of rates made from time to time and to the equalizing of rates.

In 1871 Minnesota freight rates ranged from 1¼ cents per ton per mile to 5 1/3 cents per ton per mile. In 1904 the average receipts per ton per mile on the roads of these companies were as follows:

Northern Pacific 0.889 cents;
Great Northern 0.88 cents;
Mpls. & St. Louis 1.217 cents.

Between 1887 and 1904 rates on classified merchandise, lumber, coal, flax, wheat, coarse grain, cattle, hogs and sheep, were reduced various percentages ranging from 7% to 52.4%. (Table at page 7 hereof.)

Since 1885 passenger fares had been reduced from

5 cents per passenger per mile to 3 cents; and on December 31, 1903, the State Commission, whose membership then included Commissioners Mills and Staples, Appellants herein, after elaborate investigation, reported against any reduction below 3 cents per passenger per mile. In December 1906 the same commission, prescribing the merchandise rates (and the commodity rates enjoined by the railroad companies) had no intention of making any reduction of the passenger rates, undoubtedly because of opinion that such rates were low enough. (See Staples testimony, Northern Pacific case, Vol. 6, page 2908.)

December 31, 1904, the State Commission in its annual report, at page 30, said: * * "In equipment, convenience and economy of operation the railroad companies in Minnesota have kept well ahead of the times."

Rates Reduced—Methods and Services Improved—Wages Advanced.

(Mr. Hill's testimony, Vol. 3 p. 1232 G. N.)

The extent of rate reductions in Minnesota, the efficiency of performance and economy of operation were all well illustrated by the testimony of Mr. James J. Hill, Great Northern case, Vol. 3, p. 1271, et seq. Referring to about the time when he embarked in the railroad business, about 1880, he said:

"Our earnings per mile, and of course the rate was very high. Rates I think were—oh, three to four times as high as they are now." Continuing, in substance Mr. Hill said:

I remember what the rate per ton per mile was in 1881. It was 2.88 cents; I remember when we took the

road the rate from St. Vincent to Duluth on grain was 40 cents a hundred. I think it is now 12. In the first years a very large portion of our earnings came from north of the international boundary line. I think in the year 1883, I remember writing Mr. Kennedy, who was vice-president of the Company, and a director on the Canadian Pacific Board, (so was Mount Stephen, the president of the Canadian Pacific) the importance to our Company of a permanent connection with Winnipeg, and I showed them that 43% of our entire revenue came from north of the boundary at the time that letter was written.

As to cost of operation in the early '80s compared with what it has since become, and the character of the road then as compared with the present time, he said in substance:

The railroad, as a rule, follows largely the undulations of the surface. The grades between St. Cloud and Fergus Falls were one and a quarter per cent, or about 67 feet to the mile; the same from Minneapolis to Breckenridge; and the embankment was meant to be in construction fourteen feet wide, with light rails—mostly iron rails, fifty and fifty-two pounds to the yard; small cars, small, light engines; with a train of the old, 28-foot cars, we would average from fourteen to eighteen in a train.. The cost of operation I think would be about fifty or fifty-two per cent; but call it fifty per cent, and if the revenue was 2.88 cents (per ton per mile) the cost would be 1.44 cents per ton per mile, or about *twice what we are now receiving*—that is, twice of the average rate all over the system.

That is, at that time it cost about twice what we are receiving from the public. But we are not working

with the same kind of a tool we did then, we have a better railroad now. Now we lay steel rails, and we are trying to get away from Bessemer as fast as we can to open-hearth steel, made in open-hearth furnaces, and a hundred pound section or ninety pound section. We lay more ninety pound section than we do any other size. Then our roadbed is an entirely different thing. Take the line between here and Minneapolis; it does not follow the old line at all; the grades are cut down, and the curvature. At Breckenridge the grades and the curvature have been cut down twice. I think the records of the original construction would show, if we could get them, that the amount of *reconstruction* would total in yards three times as much, or more, possibly four times as much, as was moved in the *original construction*. The reasons for rebuilding these lines in this way and for the expenditure of money for that purpose were to improve the appliances with which we are doing the work so as to enable us to reduce the cost; in other words, to enable us to get more for the dollar that we spend. When we started cutting down grades, I think our average trainload was just under two hundred tons. Now it is about 500 tons. With the old road you couldn't (move such trains.) In the first place the rails were not heavy enough, and the embankment was not heavy enough to hold up the equipment.

Not so long ago, I think in 1887, or prior to 1887, I do not think we had an engine on the road with over sixty thousand pounds on the drivers; now we have engines with 300,000 pounds on the drivers. And the cars—the old 28-foot car had a capacity of ten tons (20,000 pounds), with the understanding that you

might overload them to the extent of ten per cent. Those cars were moderately new, six or eight years old, and we would put in extra draft rods under them, put in heavier axles and heavier wheels and got the capacity up to twenty-eight or thirty thousand pounds, but we were ordering new cars at forty thousand, and then we got up to sixty thousand and now our standard box-cars are eighty-five thousand. It started 30 years ago at twenty thousand.

In those days wages were not so high as they are now. There is a difference. I had those figures made a couple of years ago, and the advance in twenty years in wages was about forty-seven percent.

We used to burn wood; now we burn coal because we can't get the wood. We used to buy wood for delivery alongside of the road for from ninety cents to a dollar and a quarter a cord. Now we bring coal from West Virginia and Pennsylvania.

It costs more to run a train per mile than it used to, but we get so much more for our dollar,—and we have to or we would be bankrupt in six months.

A reduction of the rate per ton per mile might be partially due to an increase in very heavy tonnage that was carried at the lowest rate. If there was a large increase of coal or some grain that was carried at a rate below the average, that would have the effect of bringing the average down; *but the grain tonnage in Minnesota in the past ten years has very largely decreased.*

Mr. Hill referred to the figures contained in the testimony of witness Maguire showing that in 1902 there were forwarded from stations on the Great Northern line in Minnesota 895,575 tons of all kinds of grain,

whereas in 1908 there were forwarded but 486,565 tons, being a decrease of practically one-half of the tonnage over a period of seven years; and to the statement of witness Maguire (Vol. 3, page 897) that in 1902 the Great Northern carried 784,832 tons of wheat from Minnesota points and in 1908 only 292,442 tons. In the meantime but little mileage had been added to the Great Northern in Minnesota, and some extensions of the "Soo" line affected the quantity carried by the Great Northern, *but only to a small extent.*

It was shown that the amount of grain moved in South Dakota and in North Dakota increased between 1902 and 1908. (Vol. 3, G. N., page 1275.)

Referring to the sources of traffic in Minnesota generally Mr. Hill said in substance:

This state produces practically no fish, not enough to count, seriously, in tonnage; the forests are largely exhausted; we have some standing timber and there will be some lumber cut in Minnesota, maybe twenty or twenty-five years hence, but the annual cut is very greatly reduced. And we have some ore in the northeastern part of the state, but that is owned or controlled by people outside of the state, all it does to furnish revenue to people living in Minnesota is to make a market among the miners for some butter and eggs and beef and mutton, and wages for some men, but most of the ore mining is done with steam-shovels —very different from ore mining in general. "Now when you figure it down, I think it is safe to say that seven-eighths of the revenue that supports people in Minnesota comes from the cultivation of the land, and that yield is cut in two, practically to what it was

twenty-five or twenty years ago, and we are nearing a point where we shall have to do differently."

He referred to the Exhibit 34, Parker, (6 G. N.), which shows a *decrease* in station revenue and in pounds forwarded and received at Minnesota stations, and a great *increase* of station expenses during that period, and in substance said (Vol. 3, page 1278):

The freight forwarded and received in Minnesota *at some stations* is greater than it was, but as a rule the large majority of them shows from *some* decrease, some *material* decrease, to a very *great* decrease; some of them are practically cut in two. You can't attribute it to any new railways built in that section because there haven't been any. It is due to lighter production. If the tonnage was raised in the country the people who raised it would either have to eat it or bury it or ship, and it would show in the tonnage moved. I keep a record of all the stations in Minnesota and know that a very great majority of them shows a very heavy falling off in tonnage moved and in the revenue. It is so heavy that it is rather alarming, or it would be if we had to depend on Minnesota to carry its portion of the railroad.

Mr. Hill then referred to the policy of making low rates on grain, etc.; that this policy had always been followed on the Great Northern lines and as a result, grain rates over its lines to terminal markets have always been substantially lower than elsewhere. (Vol. 3, page 1279 et seq.)

Rates Compared with Prices of Labor and Material.

A comparison of the trend in rates with relative changes in the cost of labor and commodities during the last 15 years, shows that *rates have declined substantially while the cost of labor and commodities required in the operation of railroads has greatly advanced.*

The United States Bureau of Labor, in Bulletin 77, gives the relative prices of labor for 13 years from 1894 to 1907. The average price is arrived at by taking the wages paid in 4,169 establishments.

And in Bulletin 87 are given the relative average prices of 257 commodities from 1894 to 1909.

The statistics of railways of the United States compiled by the Interstate Commerce Commission show the average rate per ton per mile and the average rate per passenger per mile by years from 1894 to 1909.

Assuming the average price of labor in 1894 to be 100, it was in 1899, 104.2, in 1904, 119.5, in 1907, 131.6.

Taking the average prices of commodities and material in 1894 to be 100, it was in 1899, 105.8, in 1904, 117.6, in 1909, 131.6.

Assuming that the average price of labor in 1909 was the same as in 1907 (statistics for 1908 and 1909 not being available) the average price of both labor and material, taking that of 1904 to be 100, was in 1899, 105, in 1904, 118.55, in 1909, 131.6.

The rates per passenger per mile expressed in cents, were in 1894, 1.986, in 1899, 1.925, in 1904, 2.006, and in 1909, 1.928. If the passenger rates had followed the general trend of prices of labor and material the

rates would have been in 1894, 1.986, in 1899, 2.085, in 1904, 2.354, and 1909, 2.814.

The rates per ton per mile were, expressed in cents, in 1894, 0.860, in 1899, 0.724, in 1904, 0.780, in 1909, 0.763. If the rates per ton per mile had followed the general trend of labor and commodity prices, they would have been in 1894, 0.85, in 1899, 0.903, in 1904, 1.041, in 1909, 1.132.

A comparison of the statistics above referred to, has been made in the tables here inserted, and the facts shown upon these tables are truthfully indicated upon the graphic charts that follow the tables.

Table showing Average Prices of Labor and of Material as reported by Bulletins of the United States Bureau of Labor, 77 and 87 respectively, based on average of the wages in 4,169 establishments, and on average prices of 257 commodities; also the relative and actual rates per ton per mile and the rates per passenger per mile by years for 15 years from 1894 to 1909, taking prices and rates of 1894 to be 100.

1. Years	2. Average price of labor	3. Average price of material	4. Average of both labor and material	5. Relative freight rate per ton per mile	6. Relative passenger rate per passenger per mile	7. Actual freight rate per ton mile	8. What freight rates would have been if they followed general trend of labor and material prices	9. Actual passenger rate per passenger mile	10. What passenger rates would have been if they followed general trend of labor and material prices
1894	100.0	100.0	100.0	100.0	100.0	.860	.860	1.986	1.986
1895	100.4	97.4	98.9	97.5	102.7	.839	.851	2.040	1.964
1896	101.8	94.1	97.95	93.7	101.6	.806	.842	2.019	1.945
1897	101.7	93.3	97.5	92.8	101.8	.798	.839	2.022	1.936
1898	102.3	97.2	99.75	87.5	99.3	.753	.858	1.973	1.981
1899	104.2	105.8	105.0	84.2	96.9	.724	.903	1.925	2.085
1900	107.8	115.0	111.4	84.6	100.8	.728	.958	2.003	2.212
1901	110.3	112.9	111.6	87.2	101.3	.750	.960	2.013	2.216
1902	114.6	117.5	116.05	88.0	100.0	.757	.998	1.986	2.305
1903	118.8	118.2	118.5	88.7	101.0	.763	1.019	2.006	2.353
1904	119.5	117.6	118.55	90.7	101.0	.780	1.020	2.006	2.354
1905	121.5	120.6	121.05	89.1	98.8	.766	1.041	1.962	2.404
1906	126.9	127.5	127.2	86.9	100.8	.748	1.094	2.003	2.526
1907	131.6	134.8	133.2	88.2	101.4	.759	1.146	2.014	2.645
1908	131.6	127.8	129.7	87.7	97.5	.754	1.115	1.937	2.576
1909	131.6	131.6	131.6	88.7	97.1	.763	1.132	1.928	2.614

CHARTS

TOO LARGE FOR FILMING

If the rates had followed the trend of prices of labor and commodities, the cost to the public, in excess of the amount actually paid for transportation, would have been $7,144,343,000, accumulated by years as shown in the table below. The reason why this saving has been afforded to the public is because of increased efficiency in operation and voluntary reductions in rates in conjunction with increases in the volume of the traffic.

	Passenger.	Freight.	Total.
1895....	9,263,000	10,227,000	964,000
1896....	9,656,000	34,318,000	24,662,000
1897....	10,541,000	39,007,000	28,466,000
1898....	1,070,000	119,781,000	120,851,000
1899....	23,346,000	221,364,000	244,710,000
1900....	33,522,000	325,678,000	359,200,000
1901....	35,228,000	308,862,000	344,090,000
1902....	62,811,000	379,067,000	441,878,000
1903....	72,578,000	443,446,000	516,024,000
1904....	76,293,000	418,853,000	495,146,000
1905....	105,197,000	512,774,000	617,971,000
1906....	131,625,000	746,936,000	878,561,000
1907....	174,904,000	915,647,000	1,090,551,000
1908....	185,839,000	788,357,000	974,196,000
1909....	199,690,000	807,383,000	1,007,073,000
Total for 15 yrs	1,072,643,000	6,071,700,000	7,144,343,000

Efficiency of Operation Compared.

It is reasonable, in determining the efficiency of operation, to compare the systems involved in these cases with other railroads. We have called attention to the statement of the Minnesota Commission, as late as December 31, 1904, in its report for the Legislature of 1905, that "in equipment, convenience and economy of

operation the railroad companies in Minnesota have kept well ahead of the times." It probably will not be claimed by anyone that these roads are not more efficient than the average of railroads in the United States, therefore a comparison of the roads of this country with roads elsewhere ought to shed some light on the situation.

Capital, performance and rates are probably the best elements to select to form a basis for just comparison. The table opposite this page shows such comparison between the United States, United Kingdom, Germany, France and Switzerland.

The same may be shown graphically by the chart following the table.

It will be noted that the railroads in the United States, compared with those in the United Kingdom, have but 22% of capitalization per mile; produce 4.47 times as much service per dollar of capital, 2.52 times as much service per dollar of net revenue; have only 33% of the gross revenue per ton per mile; and have only 38% of the net revenue per mile of road.

The railroads of the United States, compared with those of Germany, have but 55% of capitalization per mile of road; produce 1.45 times as much service per dollar of capital, 1.08 times as much service per dollar of net revenue; have only 54% of the gross revenue per ton per mile; and have only 72% of the net revenue per mile of road.

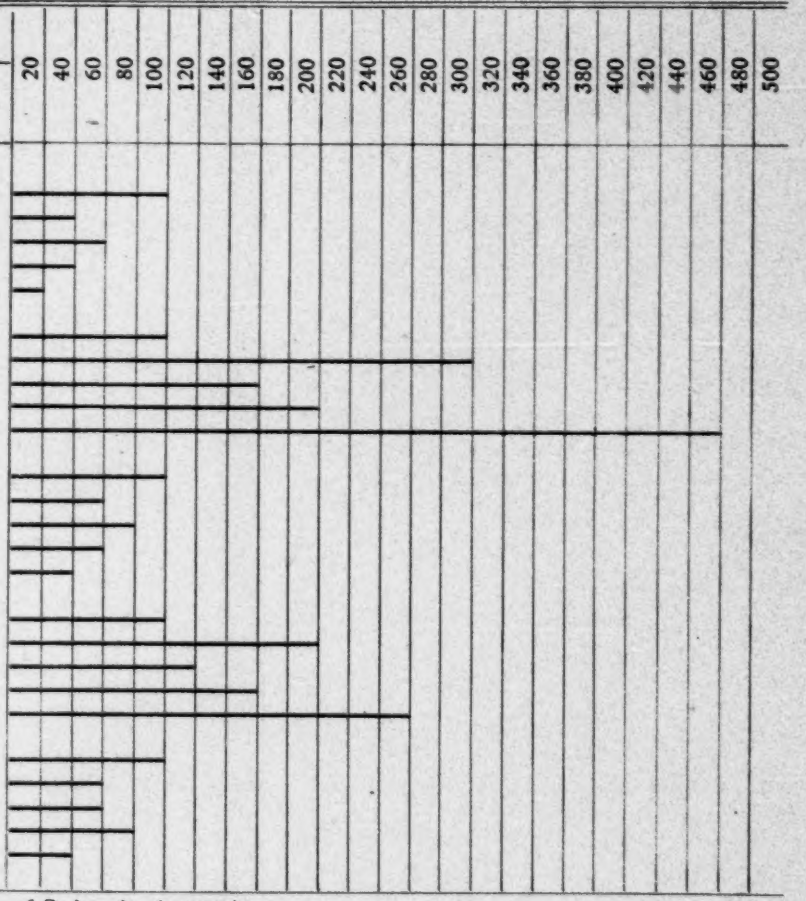
The railroads of the United States, compared with those of France, have but 43% of capitalization per mile of road; produce 2.86 times as much service per dollar of capital, 1.97 times as much service per dollar of net revenue; have only 54% of the gross revenue

	United States 1909	United Kingdom 1908	Germany 1908	France 1907	Switzerland 1907
1. Capitalization per mile of road....	$59,259	$275,040	$190,788	$139,237	$110,740
2. Units of freight and passenger service per dollar of Capital.....	18.07	4.04	12.46	6.31	8.12
3. Relative service per dollar of Capital	447	100	308	156	201
4. Net operating revenue per mile of road.....	3,505	9,127	4,816	5,641	4,672
5. Ton miles freight per mile of road..	953,986	529,622	827,400	496,939	442,012
6. Ton miles freight per dollar of revenue, net.....	272	58	172	88	95
7. Passengers one mile per mile of road	127,299	580,044	540,045	380,355	456,654
8. Passenger and freight units of service per mile of road.....	1,081,285	1,109,666	1,367,445	877,294	898,666
9. Units of passenger and freight service per dollar net revenue.....	308	122	284	156	192
10. Average earnings per passenger mile, cents.....	1.928	1.542	0.93	1.54	1.30
11. Average earnings per ton mile, cents	.763	2.333	1.42	1.43	1.74

Authorities—(I. C. Statistics of Rys. of U. S., 1909); (Report of British Board of Trade, 1908); (Statistik der im Betriebe befindlichen Eisenbahnen Deutschlands, 1908); (Statistical Abstract for Foreign Countries issued by British Government, March 1910); (Statistiques des Chemins de fer Suisses, 1907).

Relative Efficiency of Capital and Public Service of the Railroads of the United States, United Kingdom, Germany, France and Switzerland.

Item	Country	Amount	
		Total	Relative %
Capitalization per mile of road	United Kingdom	$275,040	100
	Germany	109,788	40
	France	139,237	51
	Switzerland	110,740	40
	United States	59,259	22
Units of service (ton and passenger miles) rendered public per dollar of capital	United Kingdom	4.04	100
	Germany	12.46	308
	France	6.31	156
	Switzerland	8.12	201
	United States	18.07	447
Net operating revenue per mile of road	United Kingdom	$9,127	100
	Germany	4,816	53
	France	5,641	62
	Switzerland	4,672	51
	United States	3,505	38
Units of service (ton and passenger miles) rendered public per dollar of net revenue	United Kingdom	122	100
	Germany	284	203
	France	156	128
	Switzerland	192	157
	United States	308	252
Average gross earnings per ton mile of freight, cents	United Kingdom	2,333	100
	Germany	1.42	61
	France	1.43	61
	Switzerland	1.74	75
	United States	.763	33



(NOTE: United States, year 1909. United Kingdom and Germany, 1908. France and Switzerland, 1907.)

per ton per mile; and have only 61% of the net revenue per mile of road.

The railroads of the United States, compared with those of Switzerland, have but 55% of capitalization per mile of road; produce 2.22 times as much service per dollar of capital, 1.60 times as much service per dollar of net revenue; have only 44% of the gross revenue per ton per mile; and have only 74% of the net revenue per mile of road.

(The German and Swiss roads are owned by the Governments.)

It is therefore apparent that the railroad companies in the United States render more service on less capitalization, at less cost to the public, with less profit for themselves, than the railroads of any of these countries. And it is well known generally that the wages paid employees in this country are much higher than anywhere else.

On the lines of the Pennsylvania Railroad Co. in 1864 the average revenue per ton per mile was 2.498 cents. Since that time rates have decreased greatly, the tendency being almost constantly downward. In 1910 the average revenue per ton per mile was .583 cents. In 1910 the freight earnings actually amounted to $118,203,016.73. If the company had received the average revenue per ton per mile in 1910 which it did receive in 1864 the freight revenue would have been in 1910, $506,594,208.23. There was a saving by rate reduction on the business of that year alone of $388,391,191.50.

The freight revenue collected by the company in the years 1864 to 1910 inclusive amounted to $2,164,280,-065.73.

If the average revenue per ton per mile had remained during the whole period at what it was in 1864 the company's freight revenue would have been $8,238,-359,047.15.

By reason of the reduction of rates there has been saved to the shippers since 1864, $6,074,078,981.42.

A table compiled from published reports of the company, showing by years from 1864 to 1910 inclusive, the revenue tons hauled one mile, average revenue per ton per mile, revenue collected, what revenue on basis of average received in 1864 would have been, and saving to shippers by reduction in rates, appears opposite this page.

On the lines of the Pennsylvania road in 1864 the average revenue per passenger per mile was 2.672 cents. Since that time rates have decreased greatly, the tendency being almost constantly downward. In 1910 the average revenue per passenger per mile was 1.959 cents.

In 1910 the passenger revenue actually amounted to $33,185,030.96. If the company had received the average revenue per passenger per mile in 1910 which it did receive in 1864 the passenger revenue would have been in 1910 $45,262,179.65.

By reason of the reduction of rates there has been saved to passengers since 1864 $190,500,983.25.

A table compiled from the published reports of the company, showing by years from 1864 to 1910 inclusive the passenger miles, the average revenue per passenger per mile, the revenue collected, what reve-

PENNSYLVANIA RAILROAD COMPANY—PASSENGER STATISTICS.

Year	Passengers One Mile	Average Revenue Per Passenger Per Mile (Cents)	Revenue Collected	Revenue on Basis of Average Rate Received in 1864 would have been	Saving to Passengers by Reduction in Rate
1864	163,094,736	2.672	$4,357,880.64	$4,357,880.64	$
1865	232,019,815	2.748	6,376,079.14	6,199,569.46	*176,509.68*
1866	162,395,880	2.883	4,681,191.66	4,339,217.91	*341,973.75*
1867	147,540,084	2.885	4,256,343.52	3,942,271.04	*314,072.48*
1868	156,632,079	2.708	4,241,585.82	4,185,209.15	*56,376.67*
1869	169,772,834	2.535	4,304,101.45	4,536,330.12	232,228.67
1870	169,972,984	2.568	4,364,481.43	4,541,678.13	177,196.70
1871	172,678,024	2.596	4,483,535.42	4,613,956.80	130,421.38
1872	361,676,659	2.665	9,637,166.69	9,664,000.33	26,833.64
1873	372,048,475	2.658	9,887,634.75	9,941,135.25	53,500.50
1874	364,532,316	2.603	9,488,968.56	9,740,303.48	251,334.92
1875	344,234,876	2.573	8,857,619.67	9,197,955.89	340,336.22
1876	623,208,759	2.057	12,817,473.64	16,652,138.04	3,834,664.40
1877	298,752,730	2.323	6,940,498.97	7,982,672.95	1,042,173.98
1878	292,725,524	2.309	6,759,426.43	7,821,626.00	1,062,199.57
1879	314,260,989	2.255	7,085,949.36	8,397,053.63	1,311,104.27
1880	382,787,186	2.222	8,504,387.22	10,228,073.61	1,723,686.39
1881	446,316,555	2.152	9,602,768.67	11,925,578.35	2,322,809.68
1882	496,202,927	2.249	11,160,816.55	13,258,542.21	2,097,725.66
1883	505,180,481	2.297	11,605,253.42	13,498,422.45	1,893,169.03
1884	512,873,485	2.258	11,582,198.17	13,703,979.52	2,121,781.35
1885	568,664,914	1.950	11,087,445.00	15,194,726.50	4,107,281.50
1886	576,906,276	2.114	12,194,830.84	15,414,935.69	3,220,104.85
1887	657,362,557	2.125	13,968,909.51	17,564,727.52	3,595,818.01
1888	681,684,854	2.092	14,259,507.77	18,214,619.30	3,955,111.53
1889	727,312,735	2.082	15,140,342.75	19,433,796.28	4,293,453.53
1890	778,818,917	2.077	16,177,150.55	20,810,041.46	4,632,890.91
1891	795,098,618	2.054	16,331,444.85	21,245,035.07	4,913,590.22
1892	843,819,609	1.980	16,709,533.94	22,546,859.95	5,837,326.01
1893	813,652,864	1.999	16,264,101.22	21,740,804.53	5,476,703.31
1894	693,010,056	1.977	13,703,799.46	18,517,228.70	4,813,429.24
1895	712,072,950	1.953	13,909,506.33	19,026,589.22	5,117,082.89
1896	699,799,213	1.964	13,744,556.70	18,698,634.97	4,954,078.27
1897	693,279,336	1.948	13,506,671.28	18,524,423.86	5,017,752.58
1898	745,962,679	1.932	14,410,746.46	19,932,122.78	5,521,376.32
1899	823,304,623	1.945	16,010,831.80	21,998,699.53	5,987,867.73
1900	918,198,602	1.980	18,181,081.77	24,534,266.65	6,353,184.88
1901	1,050,463,693	1.992	20,928,395.37	28,068,389.88	7,139,994.51
1902	1,165,609,033	2.009	23,421,170.86	31,145,073.36	7,723,902.50
1903	1,249,805,273	2.028	25,345,210.57	33,394,796.89	8,049,586.32
1904	1,218,521,705	2.000	24,375,018.20	32,558,899.96	8,183,881.76
1905	1,305,299,112	2.014	26,282,196,28	34,877,592.27	8,595,395.99
1906	1,493,393,002	2.014	30,074,868.06	39,903,461.01	9,828,592.95
1907	1,629,769,525	1.924	31,353,613.69	43,547,441.71	12,193,828.02
1908	1,466,109,092	1.975	28,951,656.23	39,174,434.94	10,222,778.71
1909	1,548,180,263	1.964	30,410,788.39	41,367,376.63	10,956,588.24
1910	1,693,943,849	1.959	33,185,030.96	45,262,179.65	12,077,148.69
Total.....	32,238,950,748		$670,923,770.02	$861,424,753.27	$190,500,983.25

Average Expenses per Passenger per Mile 1864—1.916 Cents.

Passengers One Mile from 1864 to 1910—32,238,950,748 x 1.916=$617,698,296.33.
Actual Expenses same period..... 516,696,485.13.

Reduction **$101,001,811.20**

PENNSYLVANIA RAILROAD COMPANY—FREIGHT STATISTICS

Year	Revenue Tons Hauled One Mile	Average Revenue Per Ton Per Mile (Cents)	Revenue Collected	Revenue on Basis of Average Rate Received in 1864 would have been	Saving to Shippers by Reduction in Rates
1864	436,591,940	2.498	$10,907,036.77	$10,907,036.77	
1865	452,183,478	2.715	12,277,490.68	11,295,543.28	*981,947.40* Loss
1866	579,839,073	2.320	13,453,592.72	14,484,380.04	1,030,787.32
1867	646,231,881	2.083	13,464,201.69	16,142,872.39	2,678,670.70
1868	806,376,652	1.858	14,983,779.28	20,143,288.77	5,159,509.49
1869	927,714,156	1.664	15,439,739.81	23,174,299.62	7,734,559.81
1870	1,014,652,970	1.503	15,252,314.99	25,346,031.19	10,093,716.20
1871	1,244,328,216	1.354	16,852,662.82	31,083,318.84	14,230,656.02
1872	1,629,613,645	1.460	23,797,237.02	40,707,748.85	16,910,511.83
1873	1,870,537,537	1.443	26,987,820.76	46,726,027.67	19,738,206.91
1874	1,916,591,690	1.290	24,715,418.15	47,876,460.42	23,161,042.27
1875	2,026,190,425	1.126	22,807,660.00	50,614,236.82	27,806,576.82
1876	2,221,739,198	.951	21,132,560.23	55,499,045.17	34,366,484.94
1877	2,086,659,438	1.014	21,149,389.38	52,124,752.76	30,975,363.38
1878	2,368,330,428	.927	21,961,447.75	59,160,894.09	37,199,446.34
1879	2,974,925,881	.824	24,500,960.21	74,313,648.51	49,812,688.30
1880	3,239,482,799	.918	29,750,291.99	80,922,280.32	51,171,988.33
1881	3,631,829,468	.857	31,128,521.00	90,723,100.11	59,594,579.11
1882	3,911,845,087	.874	34,205,596.31	97,717,890.27	63,512,293.96
1883	4,059,970,201	.881	35,764,506.82	101,418,055.62	65,653,548.80
1884	4,134,657,237	.804	33,242,301.60	103,283,737.78	70,041,436.18
1885	4,446,470,651	.695	30,895,747.98	111,072,836.86	80,177,088.88
1886	4,584,355,908	.755	34,623,877.39	114,517,210.58	79,893,333.19
1887	5,214,900,569	.730	38,080,823.85	130,268,216.21	92,187,392.36
1888	5,796,816,928	.693	40,175,773.83	144,804,486.86	104,628,713.03
1889	6,170,513,980	.686	42,302,176.16	154,139,439.22	111,837,263.06
1890	6,994,332,633	.655	45,783,597.23	174,718,429.17	128,934,831.94
1891	7,081,702,979	.659	46,650,184.10	176,900,940.42	130,250,756.32
1892	7,582,760,849	.626	47,460,452.77	189,417,366.01	141,956,913.24
1893	7,426,109,131	.614	45,606,999.25	185,504,206.09	139,897,206.84
1894	6,902,828,482	.585	40,412,551.20	172,432,655.48	132,020,104.28
1895	8,152,343,461	.563	45,922,018.18	203,645,539.66	157,723,521.48
1896	7,707,883,205	.564	43,500,713.27	192,542,922.46	149,042,209.19
1897	8,535,158,008	.536	45,770,174.10	213,208,247.04	167,438,072.94
1898	9,214,565,495	.499	45,939,773.48	230,179,846.07	184,240,072.59
1899	10,875,076,597	.473	51,395,733.16	271,659,413.39	220,263,680.23
1900	11,922,671,210	.540	64,390,452.51	297,828,326.83	233,437,874.32
1901	12,696,352,464	.582	73,899,939.16	317,154,884.55	243,254,945.39
1902	14,024,198,051	.586	82,249,169.41	350,324,467.31	268,075,297.90
1903	14 846,639,121	.505	89,895,722.67	370,869,045.24	280,973,322.57
1904	14,223,451,129	.605	86,014,076.11	355,301,809.20	269,287,733.09
1905	16,885,485,241	.593	100,093,828.25	421,799,421.32	321,705,593.07
1906	18,478,371,275	.595	109,960,888.10	461,589,714.45	351,628,826.35
1907	21,473,176,903	.577	123,816,999.03	536,399,959.04	412,582,960.01
1908	16,993,748,017	.569	96,711,869.79	424,503,825.46	327,791,955.67
1909	19,107,965,601	.580	110,748,978.04	477,316,980.71	366,568,002.67
1910	20,279,992,323	.583	118,203 016.73	506,594,208.23	388,391,191.50
Total.....	329,798,161,611		$2,164,280,065.73	$8,238,359,047.15	$6,074,078,981.42

Average Expenses per Ton per mile 1864—1.909 Cents.

Tons One Mile from 1864 to 1910, 329,798,161,611 x 1.909—$6,295,846,905.15
Actual Expenses same period 1,488,103,087.95

Reduction **$4,807,743,817.20**

NORTHERN PACIFIC RAILWAY COMPANY

Statement Showing Tons One Mile, Average Rate and Freight Revenue Received, and What Revenue Would Have Amounted To at Average per Ton Mile Rate in 1885, With Amount of Saving.

Fiscal Years 1885 to 1910 Inclusive.

Year	Tons One Mile	Average Rate Per Ton Mile-Mills	Revenue	Revenue at 1885 Average Rate of 17.786 Mills	Saving
1885	391,068,197	17.786	$ 6,955,627.08	$ 6,955,627.08	
1886	481,855,938	16.691	8,042,597.44	8,570,289.71	$ 527,692.27
1887	537,180,940	16.260	8,734,857.96	9,554,300.20	819,442.24
1888	704,772,506	14.459	10,190,758.63	12,535,083.79	2,344,325.16
1889	874,781,233	14.293	12,503,274.77	15,558,870.32	3,055,595.55
1890	1,095,880,073	14.001	15,343,114.18	19,491,322.93	4,148,208.75
1891	1,258,266,789	13.779	17,338,128.94	22,379,543.13	5,041,414.19
1892	1,227,797,469	14.001	17,197,702.71	21,837,605.90	4,639,903.19
1893	1,368,243,494	12.285	16,809,457.04	24,335,579.71	7,526,122.67
1894	1,027,149,898	11.116	11,418,692.23	18,268,888.12	6,850,195.89
1895	1,177,156,867	11.095	13,060,113.16	20,936,912.09	7,876,798.93
1896	1,316,958,350	11.353	14,951,213.50	23,423,421.21	8,472,207.71
1897	1,181,829,485	11.386	13,456,502.08	21,020,019.31	7,563,517.23
1898	1,618,170,284	10.646	17,227,690.86	28,780,776.60	11,553,085.74
1899	1,830,855,264	10.472	19,162,419.32	32,563,591.65	13,401,172.33
1900	2,205,317,271	9.877	21,783,904.19	39,223,772.96	17,439,868.77
1901	2,440,662,665	9.439	23,036,438.22	43,409,627.25	20,373,189.03
1902	3,300,253,137	9.002	29,709,699.55	58,698,302.35	28,988,602.80
1903	3,613,104,118	9.058	32,725,997.23	64,262,669.88	31,536,672.65
1904	3,685,672,022	8.800	32,434,044.25	65,553,362.55	33,119,318.30
1905	4,359,664,201	8.320	36,264,128.63	77,540,987.46	41,276,858.83
1906	5,245,260,080	8.280	43,431,781.61	93,292,195.78	49,860,414.17
1907	5,504,444,098	8.660	47,688,243.59	97,902,043.76	50,213,800.17
1908	5,156,378,369	9.000	46,423,836.33	91,711,345.69	45,287,509.36
1909	5,260,492,660	8.950	47,073,305.13	93,563,122.45	46,489,817.32
1910	5,419,084,365	9.000	48,758,736.25	96,383,834.60	47,625,098.35
			$611,722,264.88	$1,107,753,096.48	$496,030,831.60

nue on basis of average received in 1864 would have been and saving to passengers by reductions in rates, follows the tables last above referred to.

On the lines of the Northern Pacific Railroad Co. in 1885 the average revenue per ton per mile was 17.786 mills. Since that time rates have decreased greatly, the tendency being almost constantly downward. In 1910 the average revenue per ton per mile was 9.000 mills.

In 1910 the freight revenue actually amounted to $48,758,736.25. If the company had received the average revenue per ton per mile in 1910 which it did receive in 1885 the freight revenue would have been in 1910 $96,383,834.60, a saving by rate reduction on the business of that year alone of $47,625,098.35.

The freight revenue collected by the company in the years 1885 to 1910 inclusive amounted to $611,722,264.88. If the average revenue per ton per mile had remained during the whole period at what it was in 1885 the company's freight revenue would have been $1,107,753,096.48. By reason of the reduction of rates there has been saved to the shippers since 1885, $496,030,831.60.

A table compiled from published reports of the company, showing by years from 1885 to 1910 inclusive, the revenue tons hauled one mile, average revenue per ton per mile, revenue collected what revenue on basis of average rate received in 1885 would have been, and saving to shippers by reduction in rates, appears opposite this page.

On the lines of the Northern Pacific Company in 1885 the average revenue per passenger per mile was

33.18 mills. Since that time rates have decreased greatly, the tendency being almost constantly downward. In 1910 the average revenue per passenger per mile was 21.8 mills.

In 1910 the passenger revenue actually was $21,333,312.84. If the company had received the average revenue per passenger per mile in 1910 which it did receive in 1885 the passenger revenue would have been in 1910 $32,409,298.05, a saving by rate reductions on the passenger business of that year alone of $11,075,985.21.

The passenger revenue collected by the company in the years 1885 to 1910 inclusive amounted to $206,954,351.96. If the average revenue per passenger per mile had remained during the whole period at what it was during 1885 the company's passenger revenue would have been $294,803,516.61. There was a saving by reason of reductions in rates since 1885 of $87,849,164.65.

A table compiled from the published reports of the company showing by years from 1885 to 1910 inclusive the passenger miles, the average revenue per passenger per mile, the revenue collected, what revenue on basis of average received in 1885 would have been, and saving to passengers by reductions in rates, appears opposite this page.

Statement Showing Passengers One Mile, Average Rate and Passenger Revenue Received, and What Revenue Would Have Amounted To at Average for Passenger One Mile Rate in 1885, with Amount of Saving.

Fiscal Years 1885 to 1910 Inclusive.

Year	Passengers One Mile	Average Rate Per Passenger Per Mile Mills	Revenue	Revenue at 1885 Average Rate of .033180 Mills	Saving
1885	84,861,601	33.18	$ 2,815,739.80	$ 2,815,739.80	
1886	90,571,846	30.2	2,738,017.87	3,005,173.85	$ 267,155.98
1887	111,958,786	27.3	3,059,015.16	3,714,792.52	655,777.36
1888	159,483,895	27.0	4,306,170.34	5,291,675.64	985,505.30
1889	223,832,049	24.9	5,576,936.03	7,426,747.39	1,849,811.36
1890	231,382,920	25.5	5,896,878.50	7,677,285.29	1,780,406.79
1891	244,321,201	26.3	6,428,834.60	8,106,577.45	1,677,742.85
1892	222,758,224	27.0	6,006,669.90	7,391,117.87	1,384,447.97
1893	214,455,590	26.3	5,639,428.36	7,115,636.48	1,476,208.12
1894	161,041,620	24.6	3,960,771.68	5,343,360.95	1,382,589.27
1895	116,748,976	27.7	3,235,295.13	3,873,731.02	638,435.89
1896	135,236,417	27.2	3,680,102.80	4,487,144.32	807,041.52
1897	128,007,619	27.2	3,487,721.14	4,247,292.80	759,571.66
1898	209,614,677	22.2	4,659,175.92	6,955,014.98	2,295,839.06
1899	213,209,799	22.8	4,867,721.49	7,074,301.13	2,206,579.64
1900	255,680,585	23.5	6,006,155.76	8,483,481.81	2,477,326.05
1901	308,819,605	22.7	7,017,823.41	10,246,634.49	3,228,811.08
1902	406,704,017	21.8	8,885,635.91	13,494,439.28	4,608,803.37
1903	473,754,272	21.5	10,192,267.70	15,719,166.74	5,526,899.04
1904	483,650,266	22.1	10,676,851.65	16,047,515.83	5,370,664.18
1905	488,522,472	22.3	10,897,765.20	16,209,175.62	5,311,410.42
1906	659,050,227	20.9	13,791,339.57	21,867,286.53	8,015,946.96
1907	722,745,259	22.6	16,330,874.62	23,980,687.69	7,649,813.07
1908	794,351,948	22.8	18,133,238.52	26,356,597.63	8,223,359.11
1909	767,439,465	22.6	17,330,608.06	25,463,641.45	8,133,033.39
1910	976,772,093	21.8	21,333,312.84	32,409,298.05	11,075,985.21
			$206,954,351.96	$294,803,516.61	$87,849,164.65

GREAT NORTHERN RAILWAY COMPANY—FREIGHT STATISTICS.

Year	Revenue Tons Hauled One Mile	Average Revenue Per Ton Per Mile (Cents)	Revenue Collected	Revenue on Basis of Average Rate Received in 1881 would have been	Saving to Shippers by Reduction in Rates
1881	93,464,324	2.88	$ 2,691,772.54	$ 2,691,772.54	$
1882	189,862,911	2.51	4,773,005.72	5,468,051,84	695,046.12
1883	341,539,997	1.95	6,687,934.96	9,836,351 91	3,148,416.95
1884	340,347,879	1.79	6,114,459.51	9,802,018.92	3,687,559.41
1885	395,592,105	1.52	6,013,050.12	11,393,052.62	5,380,002.50
1886	374,985,532	1.49	5,587,284.43	10,799,583.32	5,212,298.89
1887	450,932,489	1.36	6,151,746.69	12,986,855.68	6,835,108.99
1888	562,531,432	1.306	7,348,513.03	16,200,905.24	8,852,392.21
1889	445,487,130	1.494	6,656,647.44	12,830,029.34	6,173,381.90
1890	666,266,543	1.251	8,332,241.86	19,188,476.44	10,856,234.58
1891	763,922,771	1.236	9,439,006.77	22,000,975.80	12,561,969.03
1892	997,991,632	1.215	12,122,128.64	28,742,159.00	16,620,030.36
1893	1,093,692,312	1.190	13,015,725.01	31,498,338.59	18,482,613.58
1894	1,074,802,718	1.067	11,463,816.41	30,954,318.28	19,490,501.87
1895	1,344,957,131	.984	13,234,560.47	38,734,765.37	25,500,204.90
1896	1,622,877,423	.976	15,833,090.47	46,738,869.78	30,905,779.31
1897	1,657,223,725	.956	15,841,330.90	47,728,043.28	31,886,712.38
1898	1,937,955,894	.932	18,056,046.88	55,813,129.75	37,757,082.87
1899	2,158,212,794	.916	19,779,209.29	62,156,528.47	42,377,319.18
1900	2,504,792,882	.899	22,533,019.93	72,138,035.00	49,605,015.07
1901	2,481,751,195	.871	21,623,653.95	71,474,434.42	49,850,780.47
1902	3,190,217,482	.859	27,409,017.23	91,878,263.48	64,469,246.25
1903	3,606,835,176	.857	30,915,234.29	103,876,853.07	72,961,618.78
1904	3,351,802,089	.893	29,944,300.32	96,533,900.16	66,587,599.84
1905	4,170,160,658	.792	33,013,722.38	120,100,626.95	87,086,904.57
1906	4,933,530.997	.791	39,044,731.56	142,085,692.71	103,040,961.15
1907	5,370,157,882	.769	41,270,191.54	154,660,547.00	113,390,355.46
1908	5,164,024,158	.7806	40,311,420.14	148,723,895.75	108,412,475.61
1909	4,841,973,201	.8151	39,464,810.65	139,448,828.19	99,984,017.54
1910	5,678,787,816	.8219	46,675,733.58	163,549,089.10	116,873,355.52
Total.....	61,806,680,278		$561,347,406.71	$1,780,032,392.00	$1,218,684,985.29

On the Great Northern lines the average revenue per ton per mile in 1881 was 2.88 cents. Since that time rates have decreased greatly, the tendency being almost constantly downward. In 1910 the average revenue per ton per mile was 0.821 cents. In 1910 the freight earnings actually amounted to $46,675,733.58. If the company had received the average revenue per ton per mile in 1910 which it did receive in 1881 the freight revenue would have been in 1910, $163,549,089.10. There was a saving by rate reduction on the business of that year alone of $116,873,355.52.

The freight revenue collected by the company in the years 1881 to 1910 inclusive amounted to $561,347,406.71. If the average revenue per ton per mile had remained during the whole period at what it was in 1881 the company's freight revenue would have been $1,780,032,392.00. By reason of the reduction of rates there has been saved to the shippers since 1881 $1,218,684,985.29.

A table compiled from published reports of the company, showing by years from 1881 to 1910 inclusive, the revenue tons hauled one mile, average revenue per ton per mile, revenue collected, what revenue on basis saving to shippers by reductions in rates, appears opposite this page.

On the Great Northern line the average revenue per passenger per mile in 1881 was 3.23 cents. Since that time rates have decreased greatly, the tendency being almost constantly downward. In 1910 the average revenue per passenger per mile was 2.204 cents, and the passenger revenue actually amounted to $14,311,800.07. If the company had received the average revenue per passenger per mile in 1910 which it did receive in 1881, the passenger revenue would have been in 1910, $20,972,956.67. There was a saving to the passengers on the passenger business of that year alone, of $6,661,156.60.

The passenger revenue collected by the company in the years 1881 to 1910 inclusive amounted to $137,519,833.20. If the average revenue per passenger per mile had remained during the whole period at what it was in 1881 the company's passenger revenue would have aggregated $186,246,802.80. By reason of the reduction in rates there was saved to passengers since 1881, $48,726,969.60.

A table compiled from the published reports of the company, showing by years from 1881 to 1910 inclusive the passenger miles, the average revenue per passenger per mile, the revenue collected, what revenue on basis of average received in 1881 would have been, and saving to passengers by reductions in rates, appears opposite this page.

GREAT NORTHERN RAILWAY COMPANY—PASSENGER STATISTICS

Year	Passengers One Mile	Average Revenue Per Passengers Per Mile (Cents)	Revenue Collected	Revenue on Basis of Average Rate Received in 1881 would have been	Saving to Passengers by Reduction in Rate
1881	25,384,814	3.230	$ 819,929.50	$ 819,929.50	$
1882	54,352,245	2.920	1,587,180.27	1,755,577.51	168,397.24
1883	68,070,479	2.987	2,033,440.92	2,198,676.47	165,235.55
1884	53,494,372	3.033	1,622,430.59	1,727,868.22	105,437.63
1885	47,480,095	2.940	1,395,797.32	1,533,607.07	137,809.75
1886	58,454,511	2.449	1,431,497.80	1,888,080.71	456,582.91
1887	66,807,712	2.242	1,497,809.02	2,157,889.10	660,080.08
1888	65,566,968	2.825	1,863.024.52	2,117,813.07	254,788.55
1889	78,188,705	2.684	2,098,673.84	2,525,495.17	426,821.33
1890	85,594,462	2.557	2,188,344.84	2,764,701.12	576,356.28
1891	97,256,920	2,462	2,394,200.82	3,141,398.52	747,197.70
1892	98,708,893	2,656	2,622,077.84	3,188,297.24	566,219.40
1893	103,413,729	2.697	2,789,422.22	3,340,263.45	550,841.23
1894	88,830,591	2.513	2,232,502.33	2,869,228.09	636,725.76
1895	87,909,930	2.698	2,371,718.29	2,839,490.74	467,772.45
1896	101,873,709	2.678	2,727,812.46	3,290,520.80	562,708.34
1897	100,280,295	2.596	2,603,091.07	3,239,053.53	635,962.46
1898	151,927,260	2.231	3,389,526.88	4,907,250.50	1,517,723.62
1899	170,213,131	2.208	3,758,799.94	5,497,884.13	1,739,084.19
1900	195,585,382	2.378	4,652.091.16	6,317,407.84	1,665,316.68
1901	214,392,859	2.289	4,909,332.74	6,924,889.35	2,015,556.61
1902	286,320,423	2.327	6,662,173.25	9,248,149.66	2,585,976.41
1903	323,404,529	2.342	7,575,629.52	10,445,966.29	2,870,336.77
1904	325,743,218	2.378	7,747,300.50	10,521 505.94	2,774,205.44
1905	335,524,414	2.384	8,000,467.46	10,837,438.57	2,836,971.11
1906	402,066,841	2.353	9,460,658.93	12,986,758.96	3,526,100.03
1907	446,587,183	2.375	10,605,597.62	14,424,766.01	3,819,168.39
1908	493,009,745	2.270	11,189,533.26	15,924,214.76	4,734,661.50
1909	490,393,926	2.239	10,977,948.22	15,839,723.81	4,861,775.59
1910	649,317,544	2.204	14,311,800.07	20,972,956.67	6,661,156.60
Total.....	5,766,154,885		$137,519,833.20	$186,246,802.80	$48,726,969.60

On the line of the Great Northern road the saving to the public by rate reductions, freight and passenger, since 1881 aggregates $1,267,411,954.89.

The average par value of its outstanding stock and bonds in the hands of the public was $155,576,917.18.

In thirty years last past freight and passenger reductions have saved to the public more than eight times the average capitalization of the company.

Recapitulation.

Thus it appears:

(a) That the rates in Minnesota were greatly reduced from time to time to 1906 when the general and sweeping reductions complained of were entered upon by the authorities of the state;

(b) The methods of operation and the character of service to the public were greatly improved from time to time and constantly during 25 years preceding the reductions—e. g. on the Great Northern road rates were reduced from 28.8 mills to less than 8 mills per ton per mile. The *cost* to the company in 1880-2-3, was about twice as much per ton per mile as it now *receives;*

(c) Prices of labor and material have greatly advanced in the last 15 years and, particularly, in the last 10 years. Rates have decreased in the same period, e. g. while the price of labor and material is 31.6% higher than 15 years ago, freight rates are 11.3% and passenger rates are 2.9% lower than they actually were 15 years ago, and freight rates are 42.9% lower and passenger rates 34.5% lower than they would have been if they had followed the trend of prices of labor and material;

(d) In character of service and economy of operation Minnesota railroads are at least equal to the average of all in the United States. The railroads in the United States, compared with those of the United Kingdom, Germany, France and Switzerland, produce more service per dollar of capital, more service per dollar of net revenue, for lower rates and for less profit per mile of road than do the railroads in any of these countries;

(e) That on the Northern Pacific system the saving to the public by rate reductions since 1885 has amounted to $583,879,996.25 and on the Great Northern since 1881, $1,267,411,954.89, or more than eight times the average capitalization of the company during that period.

The foregoing facts tend strongly to prove that the rates in effect immediately before the making of the orders and laws complained of in these suits were not greater than the reasonable value of the services covered thereby.

3. The rule contended for by appellants "that the maximum basis upon which a railroad is entitled to a reasonable return over and above the cost of maintenance and operation is the actual investment made in acquiring its rights in the necessary land, and in constructing and equipping the road, and in making the permanent improvements thereof which were paid out of capital," (p. 446, Vol. 1 N. P.) is unsound because its application in rate making would confiscate:

(1) All property due to rise in value of railroad property and facilities, and

(2) All property acquired by the expenditure of earnings for additions and betterments.

Appellants' position, distinctly indicated by the assignment of error 11-7, Vol. 1, page 446, N. P. case, read in connection with the 2nd exception taken to the Master's Report (Vol 1 page 322-3, N. P. case), is this: That rates are excessive if sufficient to yield more than a reasonable return on *"actual investment,"* i. e., the amount paid "out of capital." Appellants' position denies to owners of railroads the benefit of any increase of value which may come in course of time with the development of the country and localities opened up and improved by the railroads, and also denies to the owners all benefit of values or property arising from the expenditure of earnings which the shareholders had the right to have divided among them. Elsewhere in this brief it is shown that railroad companies are entitled to a reasonable rate of return upon the value of the property used, and at the time that it is used, to render the service covered by the rates.

Because the appellants seek to justify the determination of the Commission and of the legislature that the rates in effect at the time of the making of the orders and laws complained of were excessive and that the prescribed rates are reasonable and sufficient, by the application of the rule above stated, i. e., by denying to the companies the benefit of the increase of value of their property and the benefit of the expenditure of the earnings which belonged to the shareholders, it is proper here to consider the soundness of their contention.

And that it may the better be understood, we quote from Exception II., Vol. 1, page 323, N. P. case, where it is said "Defendants contend that as the Federal Supreme Court has often stated, railways are public highways and that in operating them the railroads are performing a governmental function. That their lands were acquired either as a gift from the government or by the exercise of the sovereign power of the state; that the right in the lands acquired in either case was the right to use them for the specified public purpose, not for private speculation. The power of eminent domain, by which their lands were acquired, is the same power employed by the state itself when it needs land for public highways, or other governmental purposes, and we contend that lands so acquired by a railroad company is just as irrevocably dedicated to public use as if acquired by the state itself for a public purpose. The only private investment in the transaction is the money actually invested by the railway company in acquiring the land and in constructing and equipping the road. *On the money so invested, but on nothing more, the railroad company is entitled to a reasonable return.* The railroads cannot at the expense of the public for their own private gain, capitalize by a fictitious valuation the public highways used by them in carrying on the governmental function which they are engaged in performing."

"Defendants therefore except to the valuation found by the Master in each case, and to every specific part and portion of such valuation, whether of the whole or of any part of either of the roads involved, and ask that the valuation be fixed at the *actual cost* of each road as is shown by the evidence, and if in either

case such original cost is not sufficiently shown that the action be dismissed for the failure of proof on the part of the complainants. Defendants also invite the Master's attention to the fact that these are not actions brought by the several railroad companies; the actions were brought by the stockholders of the several companies, ostensibly to protect their rights as stockholders. A railroad stockholder has no right in law to claim a return from the public on anything more than the *face of the valid stock held by him.* At the suit of a stockholder the value found cannot, in any view, exceed the outstanding stocks and bonds."

Appellees claim that the "actual investment" basis is not a fair measure of or guide to the value of the service to the public or the value of the property used to render that service.

Appellants' analogy of the public highway is not complete, and as used is misleading. It is true that the public has an important interest in the transportation business carried on by railroads, that the service be adequate and the rates reasonable, but the public does not own railroad property, and, while the public has the right to enjoy the use of railroads upon paying reasonable charges therefor, the ownership of the property is in the companies. The interest of the public is that the service be good and the rates low. Good service is quite as important, if not more important, than low rates.

The difference between the service and rates of two or three decades ago and those of the present time has been pointed out. No one will deny the benefits to the country which have resulted from improvement of service, increase of mileage, and reduction of

charges to the public and of cost to the companies. It is undoubtedly true that public welfare has been advanced more by the successful conduct of rail transportation business than by any other thing, unless it be the stability of the government itself.

The power of the state to regulate rates and service, subject to the limitations fixed by the Federal Constitution, exists for the protection of the public interest that the service be efficient and the rates reasonable. It is not by any means the equivalent of ownership. The power to regulate cannot be used to usurp the control or management of private property, or to dictate the business policy of its owners to any extent whatsoever beyond that necessary to insure equality and efficiency of service and equal and reasonable charges.

It is not inappropriate here to call attention to the language of this court in *Chicago & Great Western Railway Co. v. Interstate Commerce Commission*, 209 U. S. 108, 118-119. Speaking through Mr. Justice Brewer, it said:

> "It must be remembered that railroads are the private property of their owners; that while from the public character of the work in which they are engaged the public has the power to prescribe rules for securing faithful and efficient service and equality between shippers and communities, yet in no proper sense is the public a general manager. As said in Int. Com. Co. v. Ala. Mid. R. R. Co., 168 U. S. 144, 172, quoting from the opinion of Circuit Judge Jackson, afterwards Mr. Justice Jackson of this court, in Int. Com. Com. v.. B. & O. R. R. Co., 43 Fed. Rep. 37, 50:

'Subject to the two leading prohibitions that their charges shall not be unjust or unreasonable, and that they shall not unjustly discriminate so as to give undue preference or disadvantage to persons or traffic similarly circumstanced, the act to regulate commerce leaves common carriers, as they were at the common law, free to make special rates looking to the increase of their business, to classify their traffic, to adjust and apportion their rates so as to meet the necessities of commerce and of their own situation and relation to it, and generally to manage their important interests upon the same principles which are regarded as sound and adopted in other trades and pursuits.'"

It is clear that the details of corporate organization and government—the amount and kind of bonds and stock which shall be issued and the rate of interest and the amount of dividends to be paid thereon—are attributes of private ownership and within the control of the owners of the property, subject only to the limitation that service and rates shall be equal and not unjust.

The State of Minnesota has never undertaken to assume direct control of the business policy or corporate management of railroad companies. They are free to divide their net earnings by dividends to shareholders, or withhold all or part of such earnings as they see fit.

It has long been the policy of these companies—especially the Northern Pacific and Great Northern—not to divide each year among shareholders all of the net earnings over and above operating expenses (including maintenance, taxes and interest on bonds),

but on the contrary to retain some of the net earnings in prosperous years to provide against failure in times of depression, and thereby to aid in establishing and maintaining a credit in the financial centers of the world, which is necessary in order that they may develop and retain power to meet demands for improved and additional railroad facilities with which to discharge their duty to the public. *They have* retained some of such earnings in order to add to and better their existing properties to meet the demands for better and additional railroad service.

During the initial period, and afterwards, the amount of dividends paid to the shareholders of these companies was relatively small when compared with a reasonable return upon the value of their property used. For example, the Northern Pacific Company was organized in 1864, and between that time and 1898, a period of 34 years, paid *in money* dividends aggregating only 4.29% on the stock, and in addition to such dividends issued dividend certificates for 5.11% in 1882, which were redeemed by the securities of the company at the time of its re-organization in 1896, after the receivership of 1893.

These companies, instead of dividing all their net earnings, have provided funds for betterments and additions, and the value of their properties is largely in excess of the par value of the bonds and stocks. The record shows that the market value of the stock of these companies has long been above—and for long periods very much above—par value.

The state cannot evade the 14th Amendment of the Federal Constitution by defining value of these prop-

erties so as to exclude the increase resulting from the development of the territory served by them or, so as to exclude improvements and additions paid for out of surplus earnings which might have been disbursed as dividends on capital stock.

The taking of the use of property is the taking of property, and confiscation in violation of the 14th amendment. The value which has come to these properties in course of time by the development of the territory in communities served by them is their property just as much, and in every sense, as is the property purchased by moneys received for bonds or on stock subscriptions, or the private property of any individual.

In *Wilcox v. Consolidated Gas Co.*, 212 U. S. 19:

> "If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is at any rate the general rule."

The values added to these properties by expenditure of earnings which might have been divided among shareholders as dividends are as much within the protection of the 14th amendment as is any other property of these companies.

For the purpose of making the statement of their contention above referred to less unattractive and harsh it was suggested by defendants during the taking of the testimony, and at other times, that the earnings used for betterments and additions were derived from excessive rates. Even if that were true it would afford no justification for compelling these companies to use such property, not for the benefit of those who

paid the rates alleged to be excessive, but for others perpetually without reward.

The constant and enormous reductions of rates heretofore pointed out quite pursuasively negative the claim that rates ever were excessive.

Efficiency of operation and increase of business made such reductions possible. The mere fact that all net earnings were not divided among stockholders is the only basis for defendants' assumption that rates were excessive, but that fact is not only not sufficient to justify such an inference but it is no evidence tending to support it.

It is important in the interest of the public as well as of the railroad companies themselves that there be no impairment of the credit of the companies. If all earnings over and above operating expenses, interest charges and taxes must be distributed as dividends to shareholders, if land and other property of these companies may not increase in value as does other property, and if property heretofore created by the investment of earnings which the stockholders had a right to take must be perpetually used without reward, there would seem to be little foundation left upon which good credit may rest or be claimed.

In speaking of the value of *"Good credit"* to a railroad company Mr. Hill, in his testimony, in substance said:

> "Credit to a railway is like credit to an individual, a business corporation, or a bank. Credit is reputation. * * *
>
> The longer period a railroad has shown its ability to make net earnings and to meet its obligations in proportion to that it has earned a standing and credit, always supposing that its

business is carried on in an honorable, straightforward way. Of course, locality has something to do with credit. A great many people thought I had wrecked the credit of the Great Northern on two occasions; one was building west of Devils Lake to Helena and Butte, and the other was building to the Pacific coast. A great many (and some of our own investors) said, 'Mr. Hill has finally met his Waterloo; here the Northern Pacific has been in that country so many years and doesn't pay any dividend at all, and how does he expect to pay a dividend building into that country?'

Credit is something that is of great value. * * * Credit is something very tender and very sensitive. In building to the Pacific coast I thought I knew; I had studied the case thoroughly, and I thought I knew more about it and thought it would grow. Well, it has fortunately. I think both the Northern Pacific and the Great Northern today, for the mileage, get more money west of the Rocky mountains than they do east, and that change is rapidly, very rapidly, growing greater. That country is growing in leaps and bounds while we are growing backwards.

The credit of the Great Northern road is of very great value; I have always so esteemed and tried to maintain it. I think that the credit of the Great Northern road has not only a value to the Company, but it has a value to the entire Northwest. I know foreign bankers have told me that their experience with railroads in the Northwest had condemned it as a country for investment, 'but you have redeemed it, Mr. Hill.'" (Vol. 3, G. N., page 1289 et seq.)

Former rates were legally made and are presumed to be fair.

Revenues earned on such rates, or property acquired thereby, cannot be confiscated by public authority.

It will not be presumed that rates long in force and voluntarily paid by the public, which produced some of the money that has been used to improve and add to these properties, were unreasonable. The presumption and the fact are to the contrary.

At any rate, the surplus earnings used to build up these properties cannot now be distributed to the public by the enforcement of non-compensatory rates. Such earnings, even if derived from rates which might have been adjudged unreasonably high at the time they were enforced, belong to the Company and not to the State. The value created by their use is a part of these properties and neither the State nor the Public has any ownership therein.

It cannot now be ordained by the State that the shippers of this day are entitled to rates below the reasonable value of the service covered by them, and non-compensatory to the Companies, because perchance other shippers years ago sometimes paid too much, and the companies withholding division of profits among stockholders, used earnings to improve or add to their properties.

It might be claimed with the same show of reason that present shippers are entitled to have distributed among them such earnings, if any there happen to be remaining unexpended and in the treasuries of these companies.

But the truth is, there is no foundation for the claim that earnings were excessive or that dividends paid to stockholders were adequate to compensate them reasonably for the use of their property in the public service.

The existence of a surplus does not imply that adequate return has been paid to owners of the property, or that the rates were too high.

A surplus may result from a wise business policy not to divide to shareholders all net earnings.

And also from a wise public policy to permit carriers sufficient earnings to enable them to meet public needs for service.

It is to be borne in mind that prior to July 1, 1907, there never had been any classification of accounts of railroad companies prescribed by law or public authority. As to many items of expenditure it is very difficult to say how much should properly be charged to maintenance made necessary by use, and how much should be considered betterment of or addition to the plant. A multitude of considerations must be taken into account in making or attempting any classification of expenditures with accuracy as between maintenance on the one hand and improvement on the other. It is well known that there was no recognized code of rules or standards for such classification, and it would probably be impossible for any road in the country which has existed more than 25 years to ascertain from accounts, with accuracy how much, if any, of the earnings has been expended for improve-

parties agreed—at any rate there was no controversy

ment of the property as distinguished from its maintenance.

A circular issued by the Interstate Commerce Commission, effective July 1, 1907, prescribed rules for making such classification. The merits of the division were sufficiently considered in these cases. The parties agreed—at any rate there was no controversy

on the point—that the amounts set up as operating expenses are not excessive.

This subject was brought to the attention of Mr. Hill during his cross-examination, and attempt was made to ascertain how much the Great Northern Company had expended for betterments and additions out of earnings.

Among other things, Mr. Hill said (Vol. 3, G. N. page 1329):

> "Q. Could you tell to what extent those improvements were made out of capital and to what extent out of surplus?
>
> A. It would be very difficult. I don't know that there is any separation of the accounts that would show that. We might possibly, (and I don't know that we could,) show how much was the amount paid for these permanent improvements all over the system, and how much was appropriated from surplus earnings towards that, and the difference would be made up from the stock. But that would apply to the whole system. * * *"
>
> "That amount appropriated from income that has gone into improvements the gross amount would appear in the various annual reports and would be correct. That is, covering the entire system; the report covers the entire system." (Vol. 3, page 1333).
>
> "Q. I understand you as to that, Mr. Hill, that the amounts appropriated annually to the fund for permanent improvements and renewals would show the amount used out of earnings for that class of improvements which are distinctively permanent, but what I wanted to get at was whether or not there was not annually spent, out of what strictly belongs to operating expenses, especially that part of it designated maintenance of way and structures,

which went to building up the value of the property as an operating tool?

A. Well, that would be very hard to divide. I think maybe I can make it clear. After paying operating expenses and taxes and interest on the bonds, all the money, except the dividends, has gone to improvements; all the earnings has gone into the property except what has been paid to the stockholders as dividends.

* * *

Well, the maintenance of way and structures —in that account, *if there was no other money spent on the road*—would speaking in a general way and from my general knowledge, without having made up the accounts specifically, I think I may say, in fact I feel very sure, that the amount as shown in maintenance of way would not keep the property permanently in the condition that would be necessary in order to meet the demands upon it. It would take more money. The Interstate Commerce Commission provides some conditions as to our accounts in that respect. * * * They apparently recognize that in the maintenance of way and structures and in the maintenance of equipment, the ordinary method of keeping accounts has not shown a sufficient charge; they want a further charge to be made for renewals or maintenance; but there is a circular on that subject, it is a printed document and quite easily obtained." (Vol. 3, pages 1333-4-5).

"The condition of the road after being constructed and when it is put in service is very imperfect and temporary, and if we did not improve it it would soon deteriorate and go to pieces." (Vol. 3, page 1335.)

As to the amount of expenditure that has gone into the production of the Great Northern Railway Company in Minnesota out of capital and out of earnings respectively, Mr. Hill said:

"It would be very difficult to divide that. I don't know how it could be divided, in this state. The work can be shown approximately from the Company's records after 1879, as to the quantities of material used in the state in construction and reconstruction, but how much of that would come from capital or how much from surplus earnings, it would be very difficult to say." (Vol. 3, page 1337).

On being questioned as to the right of the railroad company to have the benefit of the rise in value of its land in the course of time and with the development of the country, he said;

"* * * If we approach that question on the ground that we do other investments—If I bought that corner and I paid $5,000 for it, I don't know any reason why I would be compelled to sell it for $5,000 twenty-five or thirty years later when anybody would care to give me $5,000. I could take the risk and I would be entitled to get what it would sell for, and nobody would think of questioning my right to get that." (Vol. 3, page 1341).

He was further asked:

"Q. * * * But what I wanted to get at particularly, Mr. Hill, was whether you consider it fair to take as a basis for income, upon your railroad, for instance, that portion of the present value of the property which has been paid for by the public out of the surplus earnings of your road, after it has made enough to pay its ordinary expenses and pay a reasonable dividend.

A. The answer to that would, I think, necessarily be an opinion. Unless the Company

stole the money, it belonged to the stockholders; if they earned it honestly it belonged to the stockholders, and they would be entitled to any benefit that might accrue, the same as if they earned it in the appreciation of lands. I think that a railroad going into a new country, and building it up and furnishing the facilities to open it up and doing all their share of the work, is entitled even to more consideration than the man who went out and bought the land and let it lay and did nothing whatever. If the land went from $1.50 an acre to $3.00 or $5.00, or from $10.00 up to $25.00 or $30.00, as in many cases it has in this state, nobody would challenge his right to sell it at a profit; I don't know why the railroad should not have the same advantage, because they have done something in making it possible for people to live where they could not live before."

It is unwise business policy for railway companies to divide all their net earnings among shareholders and issue new stock or bonds for all moneys required to improve or add to their property. The inevitable result will be enormously to increase outstanding capitalization and interest charges, which are certain to prevent rate reductions, if not indeed, to increase rates. The policy of the roads of the United Kingdom has been heretofore alluded to. The amount of the capitalization per mile of road, already enormous, has been increased rapidly of late years.

Mr. Hill, at page 1325, Vol. 3 G. N., of his testimony, referring to the situation of the English roads, said:

Capitalization of English Railways.

"The capitalization of English roads has been increased, as a rule, very largely from the fact

that improvements or additions to the property *have been largely supplied* by new capital. I recall, I think, when their average cost (capitalization) was $235,000, some years ago; now, the latest is something like $285,000 a mile. My attention was called to it years ago, particularly by a contest between the large holders of stock in England in the Pennsylvania road. The Pennsylvania road, Mr. Roberts was then president, were dividing about half of their net earnings, after paying expenses, interest and taxes, sometimes a little more, and the English stockholders wanted it all divided. Mr. Roberts didn't agree with them and thought there were so many things to do and so many portions of the road that would have to be rebuilt and new equipment acquired, that the road couldn't afford to do that, and my attention was called to it in that way, and I have met a great many of the English railway officers since. They have carried it so far that railway stocks that sold for very high prices, 200 per cent or more, are now very much lower and their changes would be very expensive and very slow, and it is a problem that the nation is up against. * * *"

The Interstate Commerce Commission has compiled statistics from "Railway returns of the United Kingdom" for 1910 and prior years, showing the total mileage, capitalization (stock and bonds), and capitalization per mile of road. Taking the same in five year periods, in England and Wales it is as follows:

Years	Total Mileage	Capitalization. (stock and bonds) in pounds.	Capitalization. per Mile in dollars.
1890....	14,119	740,033,907	$255,073
1895....	14,651	825,195,880	274,098
1900....	15,187	970,147,581	310,873
1905....	15,731	1,048,054,935	324,223
1909....	16,045	1,083,935,313	328,761

The increase of capitalization per mile of road for 19 years was from $255,073 per mile to $328,761 per mile, or an increase of *$73,688* per mile in 19 years against the total capitalization of the roads in the United States in 1909 of *$59,259*, exceeding such total capitalization by $14,429 per mile.

The average annual increase for the 19 years has been *$3,873* per mile, exceeding the *annual net earnings* per mile of railways in this country.

One per cent return to the owners of the bonds and the shareholders amounts to *$3,287.61* per mile per annum.

In 1908 the Northern Pacific Ry. Co. paid interest $11,374,091 and dividends $10,850,000; total $22,224,091. (See Annual Report to the State, N. P. Record.) Its main track mileage was 6,236.45 miles, which divided into the total amount of interest and dividends paid produces only *$3,579.59* per mile, or the equivalent of *1.08%* on the capitalization of the English railways. (Exhibit 80, Elliott N. P. Case Vol. 10.)

In 1908 the Great Northern Railway Company paid interest amounting to $4,842,110.97 and dividends of $12,521,482.92 and also dividends of $6,700, making a total of $16,370,293.85. (See annual reports Great Northern Record.) The main track mileage was 6,837.81 miles, which divided into the total of interest and dividends paid produces the amount of *$2,394.09*, or the equivalent of about *72/100* of one per cent on English capitalization per mile. (Exhibit 53 Ward, Vol. 6 G. N.)

In 1907 the Minneapolis and St. Louis Company paid interest on bonds, $954,840.56, interest on notes,

$249,999.99, dividends, $198,170.00, making a total of $1,403,009.59. (See annual reports of the company.) Its mileage was 1028.49, which divided into the total amount of interest and dividends paid produces $1364.13 per mile or only about *41/100* of one per cent on the capitalization per mile of the English roads. (Exhibit 3, Scott, Vol. 6 M. & St. L.)

The underlying assumption of appellants, made to support their proposition that railways are not entitled to returns upon the values of properties created by the investment of undivided earnings or surplus—over operating expenses, taxes and interest—is that such earnings were derived from excessive rates. This amounts to an assumption that the dividends paid were a sufficient return upon the value of the property.

To ascertain the rate of compensation earned year by year during the history of these roads would be impossible, because the value of the properties cannot be ascertained from year to year. The time, labor and expense involved in these cases, to ascertain present value of these properties, indicate conclusively that it would be impossible to definitely establish such values year by year during the history of these companies. Nor can the amount of earnings in excess of sums properly allowable to operating and maintenance accounts be ascertained. *This is clear, however, that in comparison with the sums required to pay return upon railroad capitalization in other countries, the total net earnings of these companies, over operating expenses and taxes, are indeed trifling. And it is to be borne in mind that the roads involved in these cases render more, better and cheaper service than the roads of any foreign country.*

Taxes Compared with Dividends, and with Dividends and Interest.

The amounts of taxes paid from time to time are known. If the amount of dividends for any year be compared with amount of taxes for that year the results will indicate how comparatively insignficant the dividends were.

For example: In 1908 the Northern Pacific Co. paid taxes amounting to $2,718,485.67. The Great Northern Co. paid taxes amounting to $2,288,179.24. In 1907 the Minneapolis & St. Louis Co. paid taxes amounting to $142,424.14.

The taxes of the Northern Pacific Road amounted to more (see annual reports in records) than *25%* of the amount of the dividends, $10,850,000.

The taxes paid by the Great Northern Road are *18.26%* of the total amount of the dividends $12,528,-181.92. In the case of the Minneapolis & St. Louis Road, in 1907 the amount of the taxes paid was *72%* of the amount of the dividends $198,170.

The dividends paid are the only moneys or income received by the shareholders who are the owners of the property. When the amount of taxes paid is compared with the dividends it is clear that the State may not justly say that the dividends are at all adequate. The years taken are fairly representative of recent years.

If the *interest and dividends* paid be compared with the taxes paid the results will be as follows:

Northern Pacific taxes are *12%* of the total amount of interest and dividends paid, $22,224,091.

Great Northern taxes are *14%* of the total amount of interest and dividends paid, $16,370,293.85.

Minneapolis & St. Louis taxes are *10%* of the total amount of interest and dividends paid, $1,403,009.59.

June 30	Stocks and Bonds in Hands of Public	Interest	Rate of Dividend	Dividends	Taxes	%Taxes to Dividend
1881	33,107,700.00	1,109,950.90	....	.....	109,588.11	.....
1882	33,646,000.00	1,188,091.02	6½%	975,000.00	195,001.94	20.00
1883	40,791,720.00	1,264,279.29	9½	1,724,664.00	252,062.67	14.61
1884	51,368,000.00	1,949,690.00	8	1,600,000.00	194,692,93	12.17
1885	54,586,000.00	2,064,189.17	6½	1,300,000.00	194,208.87	14.94
1886	54,486,000.00	2,128,820.00	6	1,200,000.00	180,248.40	15.02
1887	65,427,000.00	2,299,409.20	6	1,200,000.00	215,485.16	19.96
1888	78,877,000.00	3,005,251.23	6	1,200,000.00	264,507.93	22.04
1889	90,185,000.00	3,780,731.66	6	1,200,000.00	273,328.84	22.78
1890	106,485,000.00	3,870,330.86	6	1,400,000.00	320,435.90	22.89
1891	107,966,000.00	3,644,310.84	3¼	650,000.00		
			6	1,200,000.00	347,427.37	18.78
1892	109,649,200.00	3,736,158.72	5	1,000,000.00		
			6	1,200,000.00	456,778.66	20.76
1893	156,135,754.54	4,370,258.65	5	1,000,000.00		
			6	1,200,000.00	471,038.15	21.41
1894	165,580,454.54	5,169,557.00	5	1,187,500.00		
			6	1,200,000.00	526,031.04	22.03
1895	150,779,354.54	5,212,616.18	5	1,250,000.00		
			6	1,200,000.00	569,767.13	23.25
1896	150,433,254.54	5,184,584.29	5	1,250,000.00		
			6	1,200,000.00	664,411.58	27.12
1897	151,141,854.54	5,182,208.78	6	1,200,000.00		
			5	1,250,000.00	638,977.62	26.08
1898	157,669,454.54	5,213,740.12	6	2,700,000.00	739,496.92	27.38
1899	186,970,864.54	4,915,057.20	6	421,314.00		
			6¾	3,851,033.76	934,243.27	21.87
1900	196,706,154.54	4,822,573.18	6	28,264.00		
			7	6,408,777.72	1,015,006.32	15.77
1901	196,081,804.54	4,834,525.68	6	27,743.50		
			7	6,897,369.07	997,798.97	14.40
1902	222,514,054.54	4,949,134.01	6	27,236.00		
			7	8,225,920.50	1,272,746.21	15.42
1903	221,869,804.54	4,838,183.18	6	27,081.00		
			7	8,673,973.00	1,511,836.23	17.38
1904	221,458,304.54	4,801,348.18	6	26,986.00		
			7	8,683,925.25	1,467,666.72	16.85
1905	225,711,064.39	4,819,935.32	6	24,733.50		
			7	8,693,860.00	1,564,557.06	17.94
1906	250,352,989.39	4,924,932.57	6	21,077.50		
			7	9,148,520.50	1,822,953.81	19.88
1907	250,052,439.39	4,899,652.56	..	*10,827,604.78	2,120,707.19	19.59
1908	307,918,689.39	4,842,110.93	6	12,521,481.92		
			6	6,700.00	2,288,179.24	18.26
1909	309,989,189.39	4,726,536.41	6	14,697,473.00	2,570,372.36	17.48
1910	319,367,409.09	4,823,183.84	6	14,698,663.00	3,570,302.14	24.28

Average for year, $155,576,917.18, stock and bonds in hands of public, by year, from 1881 to 1910, inclusive.

Notes:

*Dividend St. P. M. & M. Stock	6%	20,460.00
Dividend G. N. Stock	7	10,469,661.65
Interest on Stock Subscriptions	5	337,483.13
		10,827,604.78

The Great Northern Ry. Company's report for the year ending June 30, 1908, is the first report made as an owning company and the surplus accounts shown in statement opposite (on next sheet) include the results of operation of the St. Paul, Minneapolis & Manitoba Ry. Co., the Great Northern Railway Co. and all the subsidiary companies purchased, covering period from July 1879 to June 30, 1908.

To provide the funds set aside for Additions and improvements, Depreciation of Equipment and Insurance, charges have been made to Operating Expenses or Income and amounts thus appropriated have been reinvested in the property owned by the Great Northern Railway Company.

Year ending June 30	1908	1909	1910
Fund for Permanent Improvements and Betterments	$5,057,053.77	$5,763,397.97	$5,959,014.61
Amount set aside to cover Depreciation of Equipment now in service	14,372,447.98	16,051,219.07	17,698,194.57
Insurance Funds	481,884.37	510,699.14	553,151.44
Cost of Additions and Improvements made to the property of the Great Northern Ry. Co. and paid for from fund for permanent improvements and renewals	17,822,512.47	19,934,613.10	22,253,771.44
St. P. M. & M. Ry. Consolidated Mortgage Bonds retired since November 1, 1907, through operation of sinking fund	78,000.00	78,000.00	384,000.00
Profit and Loss	27,191,800.47	35,146,545.37	34,997,560.09
	$65,003,699.06	$77,484,474.65	$81,845,692.15

Capitalization, Interest, Dividends, Taxes and Relation of Taxes to Dividends, on Great Northern Since 1881.

Opposite this page is a statement compiled from the published reports of the Great Northern Railway Company showing by years the amount of the stock and bonds in the hands of the public, the interest paid, the rates of dividend, the amount of dividends, the taxes, and the percentage of taxes to dividends; and also showing by years for 1908, 1909, 1910 the fund for permanent improvements and betterments, the amount set aside to cover depreciation of equipment now in service, insurance funds, the cost of additions and improvements made to the property of the Great Northern Railway Company and paid for from fund for permanent improvements and renewals, the amount of bonds of the St. Paul, Minneapolis & Manitoba Railway retired since Nov. 1, 1907, through operation of the sinking fund, and the profit and loss, being the balance of earnings since 1881, the total of all, being the surplus accumulated since 1881.

As before shown, the Company has reduced its rates constantly, and to such an extent that there has been a saving to the public since 1881 of $1,267,411,954.89. In addition the public has had the benefit of taxes paid amounting to $27,749,858.74. When these sums are compared with what the stockholders have received it is apparent that the public has had the lion's share of gain resulting from the successful achievements of the builders and operators of this system.

There certainly seems to be no ground for the claim of the appellants here that a part of the value of this

property ought to be adjudged not entitled to return because produced from earnings wrongfully taken from the public by excessive rates.

And unless the rule heretofore universally applied, that such companies are entitled to a reasonable return upon the *fair present value* of their properties used in the public service, be reversed, including the recent decision of this court *(Wilcox v. Consolidated Gas Co., supra)*, there is no ground for appellants' claim that so much of the value of these railroad properties as has come to them by reason of the prosperity and development of the country opened up and served by them, is not entitled to any return.

Amount Paid for Use of Plant to Haul 1 Ton 10 Miles.

In 1908 the Great Northern ton miles on the whole system were 5,164,176,870, the total amount of dividends paid was $12,528,181.92, which divided by the number of ton miles produces *2.3* mills per ton per mile. The aggregate amount of interest on bonds and dividends paid was $17,070,292.85, which divided by number of ton miles produces *3.3* mills per ton per mile.

Assuming that all of the dividends and interest were paid out of the freight business the amount actually paid to shareholders and bondholders *was 3.3 cts. for hauling 1 ton 10 miles*, and if the dividends to shareholders alone be considered they received *only 2.3 cts. for the use of the property in hauling 1 ton 10 miles.*

But the passenger revenue amounted to about 1/5 of the total freight and passenger revenue. If that business be charged with its share of dividends and interest

the amount so paid for the use of the property for transporting 1 ton 10 miles would be 1/5 less or less than *2.7* cts. of interest and dividends for hauling 1 ton 10 miles, and only *1.8* cts. of dividends alone for hauling *1 ton 10 miles.*

It is a matter of common knowledge that the demands upon railroad companies are such as to require vast expenditures for additions and betterments. In the *City of Spokane v. Northern Pacific Railway Co. et al.*, the Interstate Commerce Commission in its report in 1909, 15 Interstate Commerce Reports, 417, said:

> "It is of vast importance that our railway service should be efficient, for, just in proportion as it is inadequate, industry must suffer and commerce languish. If the present system of private ownership, is to be continued sufficient inducement must be extended to private investors. * * * It seems certain that in the immediate future very large sums of money must be expended in improving and extending railroad facilities of this country, and it is therefore extremely important that railroad investments should be made sufficiently attractive that the necessary money for these improvements can be obtained."

It is also perhaps common knowledge that new issues of securities of railroads, even in the best parts of the country, have during the last 4 or 5 years not infrequently failed to sell at reasonable prices either in this country or abroad. Many railroad companies have been obliged to resort to the issuance of short time notes at relatively high rates of interest to secure money to provide new equipment or other facilities, because of

inability to sell bonds at reasonable prices. (See testimony of Mr. Hill, Vol. 3 G. N., page 1267, et seq.)

That these considerations bear on the reasonableness of railroad rates cannot be denied.

It is manifestly wiser to pursue the policy followed by American railways, not to divide among the shareholders all the net earnings but to retain some to add to and improve the property, than to pursue the policy followed by the English roads.

Rates Compared.

4. The rates existing immediately before the making of the orders and laws complained of were not higher than the reasonable value of the services to the public. They were lower than corresponding rates in the same general territory. No reduction was justified.

The value of the services of a railway company to its patrons may be ascertained as may the value of any other things—by considering the charges or rates generally charged over a reasonable recent period of time in the same general territory and under like circumstances.

The record in these cases contains data for the making of many comparisons which will shed light upon the reasonableness of the rates which were in effect immediately prior to the reductions ordered by the Commission and the Legislature.

Merchandise rates—and the same extended to greater distances—may be compared;

(1) With former rates in Minnesota, with the distance tariffs in Montana, with Helena terminal rates, with the Washington distance tariffs, and with the Tacoma Terminal rates;

(2) With the rates from St. Paul to Butte, with the rates from Denver to Butte, with the rates from Chicago to Butte, with the rates from Chicago to Ogden, with the rates from Omaha to Ogden, and with the rates from San Francisco to Ogden, all of which are low rates in highly competitive territory;

(3) With mileage proportions of the long haul interstate rates on the Northern Pacific and Great Northern;

(4) With corresponding rates in Iowa and Illinois;

(5) With the Minneapolis & St. Louis Company's proportion of rates on through shipments from Chicago to its Minnesota stations, all of which are located in highly competitive territory, and such proportions may be compared with the amounts allowed in the Schedule for exactly the same service as that rendered by that company, and also with full local rates for the distances of that company's haul of the through business; and

(6) With through rates from Chicago over lines of connecting carriers to Minnesota stations on the line of the Minneapolis & St. Louis Company.

The Commodity Rates complained of, and the same extended to greater distances, may be compared:

(1) With the rates in effect on the lines of the Northern Pacific, Great Northern and Soo, before the voluntary reductions of grain and coal rates announced by these companies, Sept. 6, 1906, and with rates existing after voluntary reductions;

(2) As to grain with the corresponding rates in neighboring States;

(3) As to live stock with existing terminal rates to and from Minneapolis, with the Montana distance tariffs, and with the Tacoma terminal rates.

(4) As to lumber with the former Minnesota distance rates, with the terminal rates from Minneapolis, with the Montana Distance rates with Washington distance rates, and with the terminal rates from Tacoma.

Passenger Fares.

The propriety of passenger fares at 3 cents per mile in Minnesota was considered and approved by the commission as evidenced by its report of December 31st, 1903.

Maximum rates of 2 cents per mile have been held unreasonably low and confiscatory in older and more populous states where conditions were much more favorable for the cheaper transportation than it is in Minnesota.

Merchandise Rates.

The structure of the schedule promulgated by the Commission's Order, Sept. 6th, 1906, has been heretofore explained (see page 15 hereof.) Exhibit 22, Vol. 6, Tittemore, Minneapolis & St. Louis Case, is a reproduction of the schedule, and shows an extension of the same for the distance of 500 to the distance of 600 miles, by adding to the 500 mile rate, for each 20 miles between 500 miles and 600 miles, the same amount as is added for each 20 miles of additional distance between 400 miles and 500 miles.

For example, the Commission's rate on First Class for 480 miles was 73.74 cents per 100 pounds; for 500 miles 74.72 cents, being .98 of a cent addition to the rate for 20 miles additional haul. The exhibit extends the rate by adding .98 of a cent for each 20 miles of additional distance, producing for 520 miles 75.70; for 540 miles 76.68, etc.

The method employed for extending the schedule to the greater distance is in exact harmony with the principle or rule upon which the schedule is made. There is no method which will produce *higher* rates that fairly may be used for extending such schedule to the greater distances.

Comparison of Class Rates.

(See Exhibit 36 Baird, Vol. 10 Northern Pacific Case and his testimony p. 1445, et seq.)

The comparisons made by the Exhibit and explained

in the testimony are fairly indicated by the following examples:

On First Class.

100 Miles.

Minnesota distance (complained of)	32.1
Minnesota distance (former)	43
Terminal from Minneapolis (complained of)	30.6
Terminal from Minneapolis (former)	42
Montana distance	60
Terminal from Helena	54
Washington distance	60
Terminal from Tacoma	60

For 200 Miles.

Minnesota distance (complained of)	52.7
Minnesota distance (former)	63
Terminal from Minneapolis	50.2
Terminal from Minneapolis (former)	60
Montana distance	100
Terminal from Helena	74
Washington distance	100
Terminal from Tacoma	97

For 300 Miles.

Minnesota distance (complained of)	63
Minnesota distance (former)	83
Terminal from Minneapolis	61
Terminal from Minneapolis (former)	67
Montana distance	140
Terminal from Helena	94
Washington distance	140
Terminal from Tacoma	120

For 400 Miles.

Minnesota distance (complained of)	73.3
Minnesota distance (former)	103
Terminal from Minneapolis	67
Terminal from Minneapolis (former)	89
Montana distance	160
Terminal from Helena	114
Washington distance	160
Terminal from Tacoma	135

Rates from Minnesota Eastern Terminals to Minnesota Red River Points and to North Dakota Red River Points.

(Exhibit 41. Baird Vol. 10 N. P. Case.)

St. Paul, Minneapolis and Minnesota Transfer are terminal points on the easterly boundary of Minnesota, Duluth is a terminal point in Minnesota at the head of Lake Superior. Superior is a terminal point in Wisconsin, just across the bay from Duluth. East Grand Forks is at the westerly boundary of Minnesota on the Red River, and Grand Forks is directly across the river in North Dakota. Moorhead is in Minnesota on the Red River, and Fargo is directly across the river in North Dakota. Breckenridge is at the westerly boundary of Minnesota on the Red River, and Wahpeton is directly across the River in North Dakota.

Prior to the taking effect of the Commission's order, the class rate from St. Paul, Minneapolis, Duluth and Superior to each of the respective pairs of cities on the Red River, were made the same. The Commission's order greatly reduced the rates between the east-

ern Minnesota terminals—St. Paul, Minneapolis and Duluth—to the Minnesota city of each pair. The amount of reduction is shown in Exhibit 41, Baird, (Vol. 10 N. P.) by comparison of the rates before the reduction with the rates thereafter.

Some examples of first class rates follow:

To Breckenridge and Wahpeton.

To East Grand Forks and Grand Forks.

Prior to the reduction the rate from St. Paul, Minneapolis, Duluth and Superior to East Grand Forks or Grand Forks was 67c.

After the reduction the rate from St. Paul and Minneapolis to East Grand Forks or Grand Forks was 61c, and the rate from Duluth or Superior to East Grand Forks or to Grand Forks was 60c.

A comparison of such rates to Moorhead and Fargo show similar reductions.

Prior to the reductions, the rate from St. Paul, Minneapolis, Duluth and Superior to Breckenridge or Wahpeton was 61c.

After the reduction the rate from St. Paul and Minneapolis to Breckenridge or Wahpeton was 51.2, and from Duluth or Superior to Breckenridge or Wahpeton was 54.1.

On Grocers' Commodities.

Before the reduction the carload rate on certain groceries, viz., Cider, Vinegar, Canned Fruits, etc., from St. Paul, Minneapolis, Duluth and Superior to Breckenridge or to Wahpeton was 20½, and to East

Grand Forks or to Grand Forks 23½c, and to Moorhead or to Fargo 23½c.

After the reduction the rate from St. Paul and Minneapolis to Breckenridge or to Wahpeton was 17.5, to East Grand Forks or to Grand Forks 21.4, and to Moorhead or Fargo 18.7, and from Duluth or Superior to Breckenridge or to Wahpeton 18.7. To East Grand Forks or Grand Forks 21.8; to Moorhead or Fargo 19.1.

In like manner the carload rate on beans, etc., before the reduction was, from St. Paul, Minneapolis, Duluth or Superior to Breckenridge or to Wahpeton—24c; to East Grand Forks or to Grand Forks 27c; to Moorhead or Fargo 27c.

After the reduction the rate from St. Paul and Minneapolis to Breckenridge or to Wahpeton was 17.5, to East Grand Forks or Grand Forks 21.4; to Moorhead or Fargo 18.7, and from Duluth or Superior to Breckenridge or Wahpeton 18.7. To East Grand Forks or Grand Forks 21.8; to Moorhead or Fargo 19.1.

Class Rates to Butte, Montana.

(Exhibit 42. Baird Vol. 10 N. P. Case. Vol. 4 N. P. p. 1472 et seq.)

Comparisons of the Commission's rates extended to long distances with existing long haul rates show that the basis of the rates is very much lower than the basis of long established rates in the same general territory.

For example:

Rates made on the basis of the Commission's order, if applied from St. Paul to Butte, and between the

other points named, the rates to which are on an existing relation to Butte rates, would greatly reduce the rates to Butte from St. Paul or from Denver, or from Chicago, and also greatly reduce the rates to Ogden from Chicago, or from Omaha, or from San Francisco.

For example:

St. Paul to Butte.

The First Class rate from St. Paul to Butte would be reduced from $2.25 to $1.051.

On Second Class from $1.90 to $0.876.

On Third Class from $1.58 to $0.701.

Denver to Butte.

The First Class rate from Denver to Butte would be reduced from $1.80 to $0.841.

On Second Class $1.52 to $0.701.

On Third Class $1.26 to $0.561.

Chicago to Butte.

On First Class rate from Chicago to Butte would be reduced from $2.85 to $1.651.

On Second Class from $2.40 to $1.376.

On Third Class from $1.98 to $1.101.

Chicago to Ogden.

On First Class rate from Chicago to Ogden would be reduced from $2.85 to $1.651.

On Second Class from $2.40 to $1.376.
On Third Class from $1.98 to $1.101.

San Francisco to Ogden.

On First Class rate from San Francisco to Ogden would be reduced from $1.54 to $0.638.

On Second Class from $1.31 to $0.545.

On Third Class from $1.15 to $0.488.

These long distance rates have existed for many years. No successful complaint has ever been made against them. Business conditions have grown upon and exist with reference to them. They were made by competition between producers, between carriers and between consumers. It therefore seems fair to say that they are not excessive or unreasonably high.

The basis of the rates complained of are so much below these rates that it seems necessarily to follow that the latter are unreasonable and too low.

(Complainant's Exhibit 45, Baird Vol. 10 N. P. Vol. 4, N. P. p. 1488.)

Statement showing a comparison of the Rates per 100 lbs., contained in,

(A) Distance Tariff in effect in Montana, Idaho and Washington.

(B) Tariffs from Eastern Terminals to points in Minnesota, North Dakota, Montana, Idaho and Washington in effect prior to November 15th, 1906,

(C) Tariffs from Eastern Terminals to same points in effect Nov. 15th, 1906, with

(D) The schedule ordered by the Minnesota Commission, as rates would be if extended beyond the Minnesota State Line on the same basis as in Minnesota.

Illustrations of the comparisons made by the above exhibit follow:

50 Miles (St. Paul to Becker.)

Tariffs	Ave. of all	1	2	3	4	5	A	B	C	D	E
A Becker, Minn.....	21.2	40	34	28	24	20	20	16	12	10	8
B.....	14.8	30	26	20	15	12	12	11	9	7	6
C.....	10.3	20.8	17.3	13.9	10.4	8.3	9.4	7.3	6.2	5.2	4.2
D.....	10.3	20.8	17.3	13.9	10.4	8.3	9.4	7.3	6.2	5.2	4.2

250 Miles (St. Paul to Fife.)

A Fife, N. D.....	63.6	120	102	84	72	60	60	48	36	30	24
B.....	34.4	70	60	46	35	28	28	25	21	17	14
C.....	28.3	57	48	38	29	23	26	20	17	14	11
D.....	27.3	55.1	45.9	36.7	27.6	22	24.8	19.3	16.5	13.8	11

500 Miles (St. Paul to Glenullen.)

A Glenullen, N. D....	95.4	180	153	126	108	90	90	72	54	45	36
B.....	60.6	117	100	80	65	52	58	45	39	31	27
C.....	60.6	117	100	80	65	52	58	45	39	31	27
D.....	36.9	74.7	62.3	49.3	37.4	29.9	33.6	26.1	22.4	18.7	14.9

1000 Miles (St. Paul to Livingston.)

A Livingston, Mont..	148.4	280	238	196	168	140	140	112	84	70	56
B.....	115.2	215	183	151	129	108	108	86	75	54	43
C.....	115.2	215	183	151	129	108	108	86	75	54	43
D.....	48.9	99.2	82.8	63.3	49.9	39.9	45.1	34.6	29.9	24.7	19.9

1500 Miles (St. Paul to Spokane.)

B Spokane, Wash..	167	300	260	220	190	150	145	125	100	95	85
C.....	167	300	260	220	190	150	145	125	100	95	85
D.....	60.9	123.7	103.3	77.3	62.4	49.9	56.6	43.1	37.4	30.7	24.9

When compared with long haul, Interstate Rates on the lines of Northern Pacific and Great Northern the prescribed rates are so low that they violate a fundamental principle of rate making.

(Exhibit 46, Baird Vol. 10, N. P., Vol. 4 p. 1491, et seq.)

It is a well recognized principle of rate making that the average revenue per ton per mile for shorter distance should not be less than the average revenue per ton per mile on the same line for the same class of commodity for the longer distances.

The Schedule prescribed in the Commission's order may be tested in the light of this principle (which is sometimes called an axiom of rate making) by comparing the rates prescribed with existing rates for like distances, and also by comparing rates made by extending the Commission's rates to the long haul interstate distances on the lines of these carriers with rates long established and existing thereon at the time of taking effect of the Commission's order.

If such proportion of the present Northern Pacific rates on merchandise from its eastern Minnesota Terminals to stations in North Dakota, etc., as the mileage of the haul in Minnesota bears to the mileage of the total haul, be compared with the rates prescribed by the commission, it will appear that such rates are so low as not to give to the company as much revenue per ton per mile for a haul beginning and ending in Minnesota (including service at both terminals), as is yielded by its long haul interstate rates. This violates the principle of rate making above referred to.

Such violation may be illustrated by two boxes of

the same weight, and kind of goods, shipped in the same car from St. Paul, one consigned to Moorhead and the other to some point in North Dakota, or beyond. The Moorhead shipment requires two terminal services in Minnesota, the other shipment requires but one, and yet the Minnesota rate prescribed by the Commission is less than the mileage proportion of the long haul rate.

Examples follow:

The Northern Pacific Rate, St. Paul to Dickinson, 550 miles, first class was 1.27, the Minnesota mileage proportion was 57c, the rate prescribed by the Commission for 500 miles is 74.72c, one-half of which (to cover 250 miles haul, Minnesota) is 37.36c.

The rate prescribed for 250 miles is 55.12c.

If the rate prescribed in the order be extended on the principle on which the schedule is made, to the distance of 550 miles, it would be 77.2, and Minnesota's mileage proportion would be 34.7.

If the prescribed rate on the 10 Classes, extended, were applied;—The existing rates for 550 miles—the distance between St. Paul and Dickinson,—would be reduced an average on the 10 Classes 41.07%.

The existing rates for 665 miles—the distance St. Paul to Glendive—would be reduced an average on the 10 Classes 49%.

The existing rates for 743 miles—the distance from St. Paul to Miles City—would be reduced an average on the 10 Classes 52.4%.

The existing rates for 890 miles—the distance from St. Paul to Billings, would be reduced an average on the 10 Classes 55.7%.

The existing rates for 1006 miles—the distance from St. Paul to Livingston—would be reduced an average on the 10 Classes 57.3%.

The existing rates for 1129 miles—the distance from St. Paul to Helena or Butte—would be reduced an average on the 10 Classes 56.7%.

The existing rates for 1253 miles—the distance from St. Paul to Missoula,—would be reduced an average on the 10 Classes 56.4%.

The existing rates for 1510 miles, the distance from St. Paul to Spokane,—would be reduced an average on the 10 Classes 63.3%.

Since the commencement of these suits, the Interstate Commerce Commission reduced the Class Rates from St. Paul to Spokane, from $3.00 to $2.50 on First Class, and the rates on other classes correspondingly. This decision was made after most elaborate consideration (See I. C. C. Reports, Vol. 15 page 417), The rate of $2.50 on first class, and corresponding low rates on other classes have been applied by the carriers, and the order of the Commission may be properly taken as a judgment that such rates are reasonable.

It seems clearly to follow that the basis of the rates complained of which reduce the rate from St. Paul to Spokane on First Class from $2.50 to $1.227—and the rates on other classes correspondingly—is obviously unreasonable and too low. (see Maguire testimony Vol. 3 G. N., p. 805).

From Jasper, Minnesota to Warroad, Minnesota, both on the line of the Great Northern, the distance is 513 miles (see Vol. 3 G. N. p. 807), the rate prescribed by the Commission for 500 miles on first class

is *74.72c*, extended to 520 miles, the rate is *75.70c* (see Ex. 22, Tittemore, Vol. 6 M. & St. L.). The rate on the Northern Pacific for 500 miles, St Paul to Glenullen was at the time of the taking effect of Commission's order *$1.80*—more than *239%* of the rate prescribed by the Commission for that distance. After, and because of the taking effect of the Commission's order, the rate from St. Paul to Glenullen was reduced to *$1.17* (see Exhibit 45 Baird).

Rates in Illinois and Iowa.

The merchandise rates of the Northern Pacific (and those of the Great Northern are necessarily substantially the same) compared favorably with rates for similar distances in Illinois and Iowa, and in some cases were lower than corresponding rates in Illinois or Iowa, even though the rates in Iowa between any points on the Mississippi River and points on the Missouri River, a distance of over *300* miles, cannot be greater than the rate between points on the Mississippi River and the Missouri River at the shortest distance, which is substantially *200* miles, between Hannibal, Missouri and St. Joseph, Missouri. This 200 miles rate in Missouri fixes the maximum rate than can be applied across the state of Iowa, for the reason that there is a very large amount of traffic from points east of the Mississippi River to points west of the Missouri River, the rates on which are made by adding the eastern Rates to the Mississippi Rates to the locals beyond. (see Baird's testimony Vol. 4 N. P. p. 1453 et seq.)

Rate Fixed by Interstate Commission Between Sioux Falls and Duluth.

The Interstate Commerce Commission, after a hearing, fixed the Merchandise Rates between Duluth, Minnesota, and Sioux Falls, South Dakota.

The Rate on First Class was fixed at *80c,* and at the time of the trial of these cases had been in effect 8 or 9 years.

The distance between Sioux Falls and Duluth, on Great Northern, a direct route, is 343 miles, more than 314 miles of which are in Minnesota. The rate prescribed by the Commission on first class for 350 miles is *64.92* cents and for 320 miles (next above 314 miles) on first class is 61.98 cents.

The Interstate Commerce Commission's rate for 343 miles—80c, is more than 124% of the Minnesota Commission's rate for 350 miles, 64.92c.

It is to be borne in mind also that Duluth and Sioux Falls are important terminals or distributing points, while the Minnesota's Commission rate applies between *any station* and a *terminal* or *distributing station.* Obviously the rate between the two large terminals ought to be less than the other rate, but it is more than 24% in excess of it. (Vol. 3 G. N. p. 807.)

Rates Complained of Compared with Interstate Rates on traffic moved partly on the lines of Minneapolis & St. Louis Company, and partly on other lines.

The principle of rate making that the average revenue per ton per mile on the shorter haul should not be less than the average revenue per ton per mile on the longer haul on the same class or commodity on the same line, has been shown to have been violated by the Commission.

Another principle of rate making, perhaps a corrollary of that just stated—is that one of two or more connecting carriers of a through shipment, is not entitled to a greater proportion of the through rate, than the full local rate for the distance such carrier hauls the traffic.

Generally such proportion of the through rate is much less than the full local rate for such haul, because through rates as a rule do not equal, and can never properly exceed, the sum of the local rates. A local or a single rate includes compensation for two terminal services, whereas a connecting carrier never gives more than *one*, and sometimes *no* terminal service.

The Minnesota territory served by the Minneapolis & St. Louis Company, is highly competitive. All its interstate business to and from all important points moves in part over the lines of one or more connecting carriers. It originates relatively little class business. Its haul wholly depends upon connecting carriers, nearly all of whom are competitors, and it is therefore unable in any division of through rates with connecting carriers, to claim the differential which is sometimes,

allowed to the carrier *originating* the business. Many circumstances and conditions combine, to force down these interstate class rates to and from its Minnesota territory, and to prevent it from securing any undue proportion of the through rates. Yet a comparison of what it does receive with the allowances contained in the schedule complained of for the services which it renders, indicates that the schedule is unreasonable and too low.

It would be unfair to that company to compare a proportion of the through long haul rate with a strictly local rate for the same distance—which includes allowances for two terminal services.

Chicago is the principal point from which merchandise is distributed into its Minnesota territory. The Chicago & Northwestern, the Chicago & Great Western, the Chicago, Milwaukee & St. Paul and the Rock Island compete with the Minneapolis & St. Louis Co., in its Minnesota territory. The rates from Chicago to this territory must be and are substantially the same on all lines, and it is impossible for connecting carriers to obtain more than the rates via the single lines.

The distance from Chicago to various points on lines of the Minneapolis & St. Louis Company, in its Minnesota territory are from 389 miles—Chicago via Albert Lea to Manchester—to *643* miles—Chicago via Albert Lea to Madison; *but* Madison may be reached via the Minnesota Transfer and the line of the Minneapolis & St. Louis—a distance of *589* miles from Chicago.

The shortest haul on the line of the Minneapolis & St. Louis of class business from Chicago is *7* miles.

From Albert Lea to Madison, its longest haul is *269* miles, but if the haul to Madison be made via the

Minnesota Transfer, the Minneapolis & St. Louis Co. haul will be *174* miles.

The shortest haul in Minnesota territory of the Minneapolis & St. Louis Company, on traffic from Chicago to Minnesota points on its line, is the measure by which its share of the through rate is determined.

As heretofore shown the Commission's schedule includes in the rate first stated, allowances for two terminal services, and for hauling a distance of five miles. The rate for greater distances are made by adding to the first rate the allowance for hauling the additional distance. The difference between a rate for one distance, and a rate for another distance is the amount allowed for the hauling service, and includes nothing for terminal service.

For example, the rate on first class for 20 miles is 14.94c; for 100 miles it is 30.62c. The difference 15.68c is the allowance for 80 miles haul between the two points mentioned, and includes nothing for terminal service.

The amount allowed for an 80 mile haul, between 220 miles and 300 miles is half as much, or 7.84c, and the amount allowed for an 80 mile haul between 420 and 500 miles is half the amount last mentioned, or 3.92c.

It is unfair to a connecting carrier like the Minneapolis & St. Louis Co. to compare its proportion of the through rate with the amount shown *at the head* or *beginning of the schedule,* which includes allowances for two terminal services, and also for the "beginning haul," because (a) that company as the last carrier renders only one terminal service, and (b) the shipments in all cases have moved more than 200 miles—and in most cases more than 400 miles—on lines of

prior carriers before reaching the line of that company.

It would be unfair to the Commission's rates to compare that company's proportion of the through rate with the allowance in the schedule (or the schedule extended) at the *last end thereof* for the distance of its haul of the through shipment, because such allowance in the schedule includes nothing for terminal service, and that company—being the last carrier, renders one terminal service.

A concrete example will serve to make the matter plain. Assuming that a shipment moves 500 miles over several connecting carriers, and that the Minneapolis & St. Louis is the last carrier and hauls the shipment 100 miles, and delivers it to consignee at destination. The Commission's rate on first class for 500 miles is 74.72c; the rate for 400 miles is 69.82c; the difference 4.90c is the allowance in the schedule for hauling 100 miles (after the shipment is moved 400 miles), but includes nothing for terminal service.

The rate for 5 miles is 12c, and this includes allowance for terminal services, and a haul of 5 miles—or 11.2c for the terminal services, and .98 of a cent for the haul of 5 miles. The allowance in the schedule for each terminal service therefore is one-half of 11.02c or 5.51c. If this be added to 4.90c, the allowance for a haul of 100 miles (after the shipment has been moved 400 miles) we have 10.41c, *which is the exact amount allowed in the Commission's schedule for the services rendered by that company. Comparisons on the basis of this example are fair.*

Minneapolis & St. Louis Comparisons.

Exhibits 22, 25 and 26, Tittemore Vol. 6, M. & St. L. furnish data for a multitude of such comparisons. First Class business moved by the Minneapolis & St. Louis Co., to its stations in Minnesota, comes largely from Chicago. Such traffic may reach such Minnesota stations by different routes, depending upon which junction delivery is made at by the next prior carrier to the Minneapolis & St. Louis Company, such deliveries being made at Albert Lea, Minnesota, Estherville, Iowa, or Minnesota Transfer, which is midway between St. Paul and Minneapolis.

Ex. 25, Tittemore, Vol. 6, M. & St. L. Case.

Exhibit 25 shows the distance via Albert Lea and Estherville, of through shipments from Chicago to various representative points on the St. Louis Road in Minnesota (column 5). It shows the through rate (column 6), the length of the haul on the Minneapolis & St. Louis Co.'s road (column 9); that company's proportion of the through rate, and compares it with the allowance in the Commission's schedule for the last "end haul," of a shipment moved the same distance (column 11), but does not add thereto or show the amount allowed by the Commission for one terminal service. This however, may readily be obtained from exhibit 22 in the manner above illustrated, and added to the allowance for the haul shown in column 11.

Ex. 26, Tittemore, Vol. 6, M. & St. L. Case.

Exhibit 26 is on the same basis as exhibit 25, except that distances are taken via Minnesota Transfer instead of via Albert Lea or via Estherville.

Let us take a few examples:

The through distance from Chicago via Albert Lea to Montgomery is 440 miles, the through rate is 60c. The Minneapolis & St. Louis Company's haul is 58 miles; its proportion of the through rate is 24c, the Commission's allowance for the same haul 2.94 cents (exhibit 22), and for one terminal service 5.51 cents, making a total of *8.45* cents allowed by the Commission for exactly the same service, for which the company *receives 24 cents.* If the shipment moves from Chicago via Minnesota Transfer to Montgomery, the distances would not be substantially different, and the comparison of the company's proportion of the through rate, and that allowed by the Commission for the same service would be the same.

The through distance from Chicago via Albert Lea to Madison, Minnesota, is 643 miles (column 5) the through rate is $1.00 (column 6), the Minneapolis & St. Louis Company's haul is 261 miles (column 8), its proportion of the through rate is 60c (column 9), the Commission's allowance for the same haul is 13.72 cents (column 11), and for one terminal service is 5.51 cents making a total of *19.23 cents* for exactly the same service, for which the company *receives 60 cents* (Ex. 25 Tittemore Vol. 6, Minneapolis & St. Louis case). If the shipment moved from Chicago via Minnesota Transfer to Madison, the distance would be 589 miles; the through rate is $1.00., the Minne-

apolis & St. Louis haul 174 miles, its proportion of the through rate 55 cents; the Commission allows for the haul 8.82 cents and for one terminal service 5.51 cents making a total of *14.33* cents for exactly the *same service,* for which the company *receives 55 cents.* (Ex. 26, Tittemore Vol. 6, M. & St. L.)

Similar examples may be stated more briefly:

On a shipment from Chicago via Albert Lea to Waseca, the Minneapolis & St. Louis Company's haul is 32 miles, for which it *receives 24 cents,* the Commission allows *7.47* cents for exactly the *same service.* (Ex. 25, Tittemore, Vol. 6, M. & St. L.)

On a shipment from Chicago, via Albert Lea to Arlington, the Minneapolis & St. Louis Company's haul is 145 miles, for which it receives *33.5 cents,* the Commission allows *9.03* cents for exactly the *same service.*

On a shipment from Chicago to New Ulm, via Estherville, the Minneapolis & St. Louis Co.'s haul is *69 miles* for which it receives *26.8 cents,* the Commission allows *8.45* cents for exactly the *same service* (Ex. 25 and 22, Tittemore, Vol. 6, M. & St. L.)

On a shipment from Chicago via Minnesota Transfer to Hanley Falls, the Minneapolis & St. Louis haul is 138 miles, for which it *receives 47.85 cents,* the Commission *allows 12.37 cents* for exactly the *same service.*

In the instances above given the rates on First Class are taken. Similar results are shown in the exhibits for each of the other classes.

Through rates, and proportions thereof, with which are compared the Commission's allowances for the very same services covered by such proportions, have

long been in effect, and by reason of competitive conditions are very low. It cannot be denied that these comparisons indicate that the Commission's allowances are unreasonable and too low.

Proportions of Through Rates Compared with Local Rates.

While as before shown *it is unfair* to the Company to compare its proportion of the through rates with a full local rate, including allowances for two terminal services, such comparisons have been made on Exhibit 25 and 26, Tittemore (Vol. 6, M. & St. L.) to the end that the Court may have the light afforded by various comparisons of existing rates with those complained of.

The Minnesota stations mentioned on Exhibit 25 are the same as those mentioned on Exhibit 26, Tittemore (Vol. 6. M. & St. L.) and are representative of all the Minnesota stations on the Minneapolis & St. Louis Road.

Exhibit 25 shows shipment from Chicago via Albert Lea and via Estherville.

Exhibit 26 shows shipments from Chicago via Minnesota Transfer to all stations shown on Exhibit 25, and the proportions of the through rates which the Minneapolis & St. Louis Company receives on shipments from Chicago via Minnesota Transfer to stations on its lines. Such proportions are higher in every instance than the Commission's *full local rates* for the same distance, except to Waseca and St. James, but the routes via Minnesota Transfer to these stations are longer than via the Junctions of Albert Lea and Estherville respectively (Ex. 25).

If the shorter haul be taken, the company's proportion of the through rate is in all cases greater than the Commission's full local rates.

Examples:

On a shipment Chicago via Albert Lea to Montgomery the Minneapolis & St. Louis Company's haul is 58 miles (column 8). Its proportion of the through rate is 24 cents (column 9) Commission's full local rate is 22.78 cents (column 10) (Ex. 25). If there be subtracted the Commission's rate the allowance therein for one terminal service, *17.27* cents will remain to be compared with *24* cents, the amount actually received by the company. (Ex. 25.)

On a shipment Chicago via Minnesota Transfer to Montgomery the Minneapolis & St. Louis Co.'s haul is 53 miles (column 7), its proportion of the through rate is 24 cents, the full local rate fixed by the Commission is 21.8 cents. If there be subtracted 5.51 cents, the Commission's allowance for one terminal service, leaving 16.29 cents to be compared with *24* cents the amount actually received by the company.

Comparison of Through Rate from Chicago with Rates on Commission's Basis.

The distance from Chicago to Minnesota Transfer is about 410 miles via shortest lines,—for many years the rate on first class has been 60c per 100 lbs., a very low rate compelled by competition with merchandise moving from the east via the Great Lakes to Duluth, and other Lake Ports, thence by rail to Twin Cities. It is much lower than the rates for corresponding distances from Chicago (see the figures given in the

Missouri River Rate Case, Volume 14, I. C. C. Reports, page 299: S. C. 218 U. S. 88).

The distance from Chicago to Minnesota Transfer via Albert Lea over the Minneapolis & St. Louis and its connections is 491 miles. It is apparent that the rate from Chicago to the Twin Cities via that route cannot be any higher than the rate via the shortest line.

Under the Interstate Commerce Act, a higher rate for the shorter haul than for the longer haul including the shorter haul cannot be charged in such a case. It is therefore necessary that the rate do not exceed 60c from Chicago to *intermediate points*.

Notwithstanding the through rates are so low, a comparison of the same with the Minnesota rates shows that *in many instances* they are higher than the Commission's rates.

For example, they are higher in the territory represented by Hanley Falls, Boyd, Madison and Sherburn, and the rates to the other stations mentioned in these exhibits are a little lower. (Ex. 25 and 26 Tittemore, Vol. 6, M. & St. L. Case.)

Losses in revenue which would have resulted from Commission's basis of rates applied to the long-haul interstate business of the Northern Pacific Company, and if other states had reduced existing intrastate rates in like percentage as the rates complained of reduced existing Minnesota intrastate rates.

If the rates prescribed in the orders of September 6th, 1906, and May 3rd, 1907, or such rates extended on the principles on which they are made, to the merchandise business of the Northern Pacific Company, **in the year ended June 30, 1906,** its total revenue from that business would have been reduced more than 25%, or $5,072,406.79. These reductions of revenue are arrived at by a *comprehensive comparison* of the Commission's rates—and such rates extended to long haul interstate distances—with existing interstate rates for such distances, and by applying to the intrastate business in other states, rates reduced below the existing rates therein in like percentages as such order reduced the existing Minnesota intrastate rates. (See Exhibits 62 and 62-H, Johnson, Vol. 10 N. P., and page 1688 et seq. Vol. 4 N. P.)

Commodity rates prescribed by Chapter 232 of the Laws of 1907, and those rates extended, compared with other rates.

Wheat, Etc., and Coarse Grain.

Wheat rates were voluntarily reduced on the lines of the Great Northern, Northern Pacific and Soo companies about 10%, in the autumn of 1906, as hereinbefore stated. Such reductions within Minnesota resulted in reductions in many interstate rates on such lines, and also compelled the reduction of many rates, both intrastate and interstate, on the lines of other companies extending into Minnesota.

Comparison of Grain Rates from Minnesota, North Dakota and Montana points to eastern Minnesota terminals.

(A) What the rates were September 1st, 1906, before voluntary reduction.

(B) Present rates after voluntary reductions.

(C) The prescribed rates, and prescribed rates extended.

(Exhibit 44 Baird, Vol. 10 N. P.)

For example, rates were and are as follows:

On wheat to Minneapolis from Wadena, a distance of 150 miles, former rate 10.5 cents, voluntarily reduced to 9.5 cents, prescribed by the Act, 8.7 cents.

On coarse grain, Minneapolis from Wadena, a distance of 150 miles, former rate 10.5 cents, voluntarily reduced to 9.5 cents, prescribed by the Act, 7.6 cents.

On wheat from Berea, North Dakota, a distance of 300 miles, former rate 13.5 cents, present rate 13 cents, prescribed by the Act, 10.9 cents.

On coarse grain from Berea, North Dakota, a distance of 300 miles, former rate 13.5 cents, present rate 13 cents, prescribed by the Act, 9.6 cents.

On wheat from Eagles Nest, a distance of 500 miles, present rate 18 cents, basis prescribed by the Act, 13.1 cents.

On coarse grain from Eagles Nest, a distance of 500 miles, former rate 18 cents, basis prescribed by the Act, 11.6 cents.

On wheat from Livingston, Montana, a distance of 1000 miles, former rate 35 cents, basis prescribed by the Act, 18.6 cents.

On wheat from Spokane, Washington, a distance of 1500 miles, present rate 50 cents, basis prescribed by the Act, 24.1 cents.

On coarse grain from Spokane, Washington, a distance of 1500 miles, present rate 50 cents, basis prescribed by the Act, 21.6 cents.

Minnesota grain rates compared with rates in neighboring states are relatively low.

The Minnesota rates before the reductions complained of, compared with rates in Iowa, Illinois, Wisconsin and North Dakota, were low, taking into account relation of tonnage per mile of road. All of these states are grain producing states. The average production per mile of road according to Report of Department of Agriculture, 1907, referred in the testimony of Baird at page 1450 (Vol. 4 N. P.) was as follows:

Iowa	40,851 Bushels
Illinois	40,235 Bushels
North Dakota	31,011 Bushels
Minnesota	25,480 Bushels
Wisconsin	16,898 Bushels

The average of Minnesota and North Dakota taken together was 27,270 bushels. It is not unfair to assume that the volume of grain per mile of railroad is fairly representative of the volume of tonnage of other commodities moved in such states. At any rate the volume of grain has direct bearing upon the rates thereon, and—other things being equal—should decrease as tonnage increases.

If the tonnage of Iowa be taken as 100%, based upon the relation of the volume of grain products in this state, the rate in other states should bear relation to Iowa rates as follows:

Illinois	102%
North Dakota	131%
Minnesota	160%
Wisconsin	242%
Minnesota and North Dakota combined	149%

but the rate for equal distances between points of shipment and Chicago are as high as or higher than those for like distances from points of shipment to Minneapolis

(Baird's Testimony, Vol. 4 N. P. page 1452).

For example:

The rate from Low Moor to Chicago, via Chicago & Northwestern Line, 148 miles, is, on wheat 10 cents, coarse grain 10 cents. The existing Minnesota rate on wheat from Wadena to Minneapolis—150 miles,

is 9.5 cents and on coarse grain 9.5 cents. The rates complained of on wheat are 8.7 cents and on coarse grain 7.6 cents.

From Lisbon, Iowa to Chicago is 202 miles. The rate on wheat is 13 cents and on coarse grain 11 cents. The existing terminal rate on wheat in Minnesota for 200 miles is 10 cents, on coarse grain 11 cents, and the reduced rate is on wheat 9.6 cents, and on coarse grain 8.4 cents.

From Carroll, Iowa, to Chicago is 396 miles. The rate on wheat is 14.7 cents, on coarse grain 13.3 cents.

The rate complained of on wheat for 400 miles is 12 cents, and on coarse grain 10.6 cents (see Testimony of Baird Vol. 4 N. P. page 1450 et seq.)

The existing rates from Minnesota and Dakota points to Minneapolis are lower than the Iowa rates above mentioned for like distances.

Comparison of rates complained of with through rates from Minnesota stations on Minneapolis & St. Louis Road to Chicago.

Also comparison of corresponding full local rates complained of with its proportion of the through rates.

Exhibit 23, Tittemore Vol. 6 M. & St. L. (see his testimony on page 798 et seq.), shows points of shipment of wheat, etc., and coarse grain, the through distance to Chicago, the existing through rates, rates made on statute basis; the distance of the Minneapolis & St. Louis Company's haul, and proportion of the through rates compared with the full local rates.

The through rates to Chicago exceed the statute basis of rates in each instance, and that company's proportion of the through rates equals or exceeds the full local rate prescribed by the Act for the distance of the haul of that company.

For example:

Manchester via Albert Lea to Chicago is 389 miles, the rate on wheat is 15 cents, the rate prescribed by the Act 11.9 cents. On coarse grain the through rate is 15 cents, the rate prescribed by the Act is 10.5 cents. Minneapolis & St. Louis Company's haul is 7 miles, for which it receives 7½ cents. The rate prescribed by the Act for that distance is 3.3 cents. On coarse grain it receives 7½ cents, the rate prescribed by the Act for that distance is 2.8 cents.

From Hanley Falls via Minnesota Transfer to Chicago is 553 miles. The through rate on wheat is 17½ cents, the statute basis is 14 cents; on coarse grain the through rate is 17½ cents, the statute basis is 12.9 cents. The haul of the Minneapolis & St. Louis Co. is 138 miles, for which it receives on wheat 10 cents; the full local rate prescribed for that distance by the statute is 8.5 cents. It receives on coarse grain 10 cents; the full local rate prescribed by statute is 7.5 cents.

The Minneapolis & St. Louis Co. does not reach Chicago on its own lines. The Minnesota territory served by it is highly competitive—the Chicago Northwestern Line is near by and parallels it on one side, the Chicago, Milwaukee & St. Paul road is near by and parallels it on the other side for much of its mileage in Minnesota. The lines of these companies reach Minneapolis (The Chicago & Northwestern Com-

pany connecting with the lines of an associated company, The Chicago, St. Paul, Minneapolis & Omaha into Minneapolis), Milwaukee and Chicago which are the principal interstate grain markets for southern Minnesota. These competing lines are more direct to Chicago than the routes of the Minneapolis & St. Louis Company over the lines of other connecting carriers.

The rate on grain and products of grain from Minneapolis to Chicago—a distance of 400 miles by the shortest line, and more than 500 miles by some lines participating in the business—is 7½ cents per 100 pounds. This is one of the lowest rates in the country, as is indicated by the fact that the wheat rate for 400 miles prescribed in the Act complained of is 12 cents, and the coarse grain rate is 10.6. *This is a legislative determination that 7½ cents per 100 pounds for 400 miles from the Minnesota grain fields to the grain markets in Minnesota, Minneapolis and Duluth is much too low.* This rate has always been recognized as too low to be a measure of reasonableness for rates for like distances from producing points to any primary markets. The reasons that rates from points of shipment to terminal markets, are, and should be, higher than rates between great markets like Minneapolis and Chicago, are so obvious as not to require more than mere statement. Among them the following may be mentioned:

(a) The bulk is so large that the business may be moved cheaply on through trains and often in solid trainloads.

(b) There are at least seven carriers by rail—the Chicago & Northwestern, Chicago, Burlington & Quincy, Chicago, Milwaukee & St. Paul, the Soo, Chi-

cago & Great Western; Chicago, Rock Island & Pacific; the Minneapolis & St. Louis Company connecting with the Illinois Central—competing for the business.

(c) The Lake and Rail routes via Duluth and Superior are strong competitors for all eastern, Atlantic seaboard and export traffic, and can and do make very low rates. The carriers via Chicago are bound to meet those rates or withdraw from the business.

The 7½ cent rate from Minneapolis to Chicago, has become and has long been recognized as a factor in rates from the Minnesota territory of the Minneapolis & St. Louis Company, and from all southern Minnesota, to Chicago. These rates to Chicago are, as a rule, made by taking the rate from points of shipment to Minneapolis plus 7½ cents, the rate from Minneapolis to Chicago.

(See Exhibit 20, Tittemore, Vol. 6 M. & St. L., and his testimony on page 110, Vol. 2 M. & St. L.)

This relation of rates between points of shipment and Minneapolis and the rates from such points to Chicago have been always considered right, and must be maintained in order to avoid discrimination in favor or against one or other of these markets.

This very low rate of 7½ cents for 400 miles being one of the factors in the rates from points of shipment to Chicago, a rate yielding more per ton per mile ought to be applied from the southern Minnesota stations to Minneapolis—or for any equal distance from any grain fields to any market. The rates from such Minnesota points of shipment to Chicago—because of this low factor,—are lower than any normal or reasonable rates for like distances.

It having, as aforesaid, been made to appear by the testimony that the rates prescribed by the Act—or those rates extended to distances exceeding 400 miles, are lower in all instances than the existing through rate from points of shipment to Chicago, and also that in all instances, where the shortest haul is used, the Minneapolis & St. Louis Company's proportion of the through rate from its Minnesota stations to Chicago is greater than the full local rate prescribed in the Act for the distance of that company's haul, *it follows without doubt that the rates prescribed in the Act are unreasonable and too low.*

Reduction of interstate grain rates compelled by the voluntary reductions on the Northern lines, and by Chapter 232.

Exhibit 14 A Tittemore (Vol. 6, M. & St. L.) shows that after the Minneapolis & St. Louis Company had made reductions of more than five per cent to meet the wheat rates as voluntarily reduced by the Great Northern and Northern Pacific and the Soo roads, the enforcement of the rates prescribed by the Act would have further reduced its intrastate revenue on wheat 13.6 per cent, making a total reduction of 18.22 per cent.

On coarse grain, the application of the rates prescribed in the Act would have compelled a further reduction of 19.96 per cent, in addition to the earlier reduction making a total reduction of 29.93 per cent of the revenue.

Minnesota Grain Rates are lower than rates in neighboring states for like distances.

The testimony of Mr. Hill (page 1279 et seq. Vol. 3 G. N.) shows that the grain rates in Minnesota were low, taking the conditions into account. Among other things he said:

> "For instance, as a policy, we have made grain rates very low, we have led in the reduction in grain rates in the Northwest. I remember being called by the Railroad and Warehouse Commission when Senator Gibbs and Gen. Becker were members (and I don't know whether the other member of the Board was Col. Baker or Mr. Liggett) and they wanted to know if we couldn't make a reduction in the grain rates. Just at that time grain rates had been enjoined by the court; a reduction had been ordered in Iowa and had been enjoined by the courts. I asked them if they would be satisfied with the rates that the court had enjoined in Iowa. They said they would. I asked them to get the tariff and take our tariff and compare, and our rate was fifteen per cent lower than the rates that had been a short time before enjoined in the State of Iowa.
>
> I used to compare the rate from La Crosse to Milwaukee, 200 miles, with our rate from Breckenridge to Minneapolis, 204 miles, and our rate was always lower; and today take from West of Lake Superior out towards Devils Lake, in North Dakota, and from Chicago out to Western Iowa west of Des Moines, I think out rates are fully twenty per cent under them, and have been for years. Well, we have made that rule our policy, because we have tried to build the country up, and in building the country up all the other different kinds of business would go with it, because the cultivation of the land was the foundation."

It was also shown that the volume of grain shipped from Great Northern stations in Minnesota (and such stations are representative of the state) declined from 395,575 tons in 1902 to 486,565 in 1908, (see Mr. Hill's testimony p. 1274, Vol. 3 G. N.) and that the volume of *wheat* from such stations declined from 784,832 tons in 1902 to 292,442 in 1908 (Ibid p. 1275).

Livestock Rates.

A comparison of the rates on live stock (cattle—double deck cars—hogs and sheep single deck cars) (1) prescribed by chapter 232, with (2) the existing terminal rates to or from Minneapolis, (3) the Montana distance rates (4) and terminal rates to Tacoma shows:
11.

That the prescribed rates on *cattle* are 19.1% lower than existing terminal rates to or from Minneapolis; 42 per cent lower than Montana distance rates; and 49.2 per cent lower than terminal rates to Tacoma;

That the prescribed rates on sheep *in double decked cars* are 19.1% lower than existing terminal rates to or from Minneapolis; 42 per cent lower than the Montana distance rate, and 49.2 per cent lower than the terminal rates to Tacoma;

That the rates prescribed for sheep *in single deck cars* are 28.1 per cent lower than terminal rates to or from Minneapolis, 48.5 per cent lower than Montana distance rates, and 54.8 per cent lower than the terminal rates to Tacoma. (See Baird Exhibit 39, Vol. 10, N. P., and his testimony Vol. 4, N. P., page 1448 et seq.)

The enforcement of these rates would reduce the existing rates from East Grand Forks to St. Paul, as follows:

On hogs from 26 cents to 21.4 cents, being a difference of 4.6 cents per 100 pounds, or $8.74 per carload of 19,000 pounds. (See Exhibit 40 Baird, Vol. 10, N. P., and his testimony Vol. 4, N. P., page 1459 et seq.)

Reductions of live stock rates on Minneapolis & St. Louis Railway Co. which would be compelled by Chapter 232.

By Exhibit 14 A, Tittemore, Vol. 6. M. & St. L., it is shown that the present rate on *cattle* would be reduced by that Act on the Minnesota intrastate business 8.84 per cent, and on a large part of its interstate business in Minnesota 9.63 per cent, and on other interstate business 5.94 per cent on the average.

Comparison of Rates on Lumber.

Comparisons of the rates on lumber for distances up to 400 miles, namely:

(a) Prescribed by Chapter 232 with
(b) The Minnesota distance rates,
(c) Terminal rates from Minneapolis.
(d) Montana distance rates.
(e) Washington distance rates and
(f) Terminal rates from Tacoma,

show:

That the rates complained of are on the average 37.3 per cent lower than the Minnesota distance rates; 20.3 per cent lower than the terminal rates from Min-

neapolis; 26.3 per cent lower than the Montana distance rates; 48.4 per cent lower than the Washington distance rates; and 29.1 per cent lower than the terminal rates from Tacoma.

For example, the prescribed rate for 100 miles is 9 cents per 100 pounds, the former Minnesota distance rate 11.5—terminal rates from Minneapolis 9 cents, Montana distance rates 9.5 cents, Washington distance rates 12 cents, terminal from Tacoma 12 cents.

The prescribed rate for 200 miles is *11 cents* per 100 pounds, Minnesota distance *16.5* cents. Terminal from Minneapolis 13.5 cents, Montana distance 14 cents, Washington distance 20 cents. terminal distance from Tacoma 15 cents.

The prescribed rate for 400 miles is *13.7* cents per 100 pounds. The Minnesota distance rate is 26.5 cents, terminal rate from Minneapolis 21 cents, Montana distance 22 cents, Washington distance 32 cents, terminal rate from Tacoma 20 cents (see Ex. 38, Baird, Vol. 10, N. P., his testimony Vol. 4. N. P. p. 1447)

For a graphic illustration of a comparison of the rates prescribed on lumber and shingles, by Chapter 232 complained of, extended to a distance of 1900 miles on the principle on which the tariff was made, with the rates on lumber and shingles from Tacoma, see Exhibit 43, Baird, Vol. 10, N. P. case, and the explanation of the same in his testimony Vol. 4, N. P., p. 1493, et seq.

The former rate on lumber and shingles from Puget Sound to Minnesota Transfer and St. Paul was 40 cents per hundred pounds on lumber and 50 cents per hundred pounds on shingles, and during the pendency of these suits the Northern Pacific and other interested

carriers filed a tariff with the Interstate Commerce Commission stating the rates from Puget Sound to Minnesota Transfer and St. Paul to be 50 cents on lumber and on shingles 60 cents, but the Commission refused to permit such rates to be applied and prescribed rates on lumber from Puget Sound to Minnesota Transfer and St. Paul, at 45 cents per hundred pounds, and on shingles at 55 cents per hundred pounds.

The rates on lumber, 40 cents per 100 pounds, and on shingles 50 cents per 100 pounds from the Puget Sound district to Minnesota Transfer and St. Paul and other points in Minnesota have always been recognized as very low and were made about the year 1893 when the Great Northern Road was completed to the Coast, and before the considerable development of the lumber industry in that vicinity, in order to enable the sale of lumber and shingles from that district in the valleys of the Missouri and Mississippi rivers and eastern territory in competition with other sources of supply, and in order to furnish loading of the eastbound cars which had been hauled westerly laden with freight for Pacific Ocean points and foreign trade.

Indeed, the Interstate Commerce Commission by the order determined that the former *rates* were really too low. Yet the former rates are very much higher than—and in some instances nearly double—the rates complained of, *extended to long distances.* (Ex. 43, Baird, Vol. 10, N. P.)

A comparison of the rates on lumber from Tacoma to points easterly of Thorpe, Washington, to and including St. Paul with the rates prescribed in Chapter 232 if extended upon the principle upon which the

schedule is made for 1900 miles shows that enormous reductions would be produced, if the Minnesota basis of rates were to be applied.

For example, the rate from Tacoma to Pasco, a distance of 250 miles, is 15 cents per hundred pounds, Minnesota rate, 11.8 cents.

To Concord 350 miles, the existing rate is 19.5 cents, Minnesota rate 13.2 cents.

To Yardley, Washington, a distance of 400 miles, existing rate is 23 cents, Minnesota rate 13.7 cents.

To Heron, Montana, 500 miles, existing rate is 29 cents, Minnesota basis 14.7 cents.

To McDonald, 600 miles, existing rate is 33 cents, Minnesota basis 15.7 cents.

To Hell Gate, 700 miles, existing rate is 35 cents, Minnesota basis 16.7 cents.

To Laurel, 1000 miles, existing rate is 35 cents, Minnesota basis 19.7 cents.

To Terry, 1200 miles, existing rate is 35 cents, Minnesota basis 21.7 cents.

To Glenullen, 1400 miles, existing rate is 40 cents, Minnesota basis 23.7 cents.

To Minnesota Transfer, 1900 miles, existing rate is 45 cents, Minnesota basis 28.7 cents.

A graphic chart attached to this exhibit 43 Baird, Vol. 10, N. P., clearly shows a comparison of the Minnesota scale of rates on lumber and shingles with corresponding existing rates.

Hard and Soft Coal Rates.

A comparison of the rates on the lines of the Northern Pacific Company on hard coal and on soft coal,—namely:

(a) Prescribed by Chapter 232 and complained of with

(b) The rate from Duluth,

(c) From Red Lodge, Montana,

(d) From Roslyn, Washington,

shows:

(Exhibit 37 Baird, N. P.)

That the hard coal rates complained of are 16.4% lower than the existing rates from Duluth.

That the soft coal rates complained of are 29.4% lower than the existing rates from Duluth, 36.7% lower than the coal rate from Red Lodge, and 44.9% lower than the coal rate from Roslyn.

For example, the *hard coal rate* prescribed for 100 miles is $1.01 per ton against the former rate of $1.25 per ton;

For 200 miles, $1.44 per ton against $1.90 per ton;

For 300 miles, $1.92 per ton against $2.10 per ton.

The prescribed rate for *soft coal* for 100 miles is 82 cents per ton against the former rate from Duluth of $1.15 per ton; from Red Lodge, $1.30; from Roslyn, $1.35;

For 200 miles, $1.16 against the existing rate of $1.85 from Duluth; from Red Lodge, $1.65; from Roslyn, $2.05;

For 300 miles, $1.54 against the rate from Duluth of $2.00; from Red Lodge $2.25; from Roslyn $2.50;

For 400 miles the prescribed rate is $1.72 against the rate from Duluth of $2.15; from Red Lodge, $3.00;

and $3.30 from Roslyn. (See Exhibit 37, Baird, Vol 10, and his testimony, Vol. 4, page 1447, N. P.)

The existing rate on hard coal from Duluth to Breckenridge is $2.10. The prescribed rate is $1.63 per ton, a reduction of 47 cents. The Act would reduce the rate on soft coal from $2.00 to $1.31, or 69 cents per ton. From Duluth on hard coal to East Grand Forks, from $2.10 to $1.96, or 14 cents per ton, and on soft coal from $2.00 per ton to $1.57, or 43 cents per ton. Ex. 40 Baird, Vol. 10 N. P.

On the lines of the Northern Pacific and the Great Northern and Soo Companies in the Autumn of 1906 the Minnesota Coal Rates were reduced 10%. This made it necessary to reduce many corresponding interstate rates. (Maguire, Vol. 2, G. N., page 800.)

Effect of enforcement of Chapter 232 on lines of Minneapolis and St. Louis Company.

Exhibit 14 A, Tittemore, Vol. 6, M. & St. L., shows that on *soft coal* in the States of Iowa and Minnesota the revenue would have been reduced by reason of the Act complained of 32.47%, which, added to reductions made to meet voluntary reductions by the Northern roads, would have been 42.48%, and on *hard coal* Minnesota intrastate revenues would have been reduced by the Act complained of 25.54%, which, added to reductions made to meet the voluntary reductions by the Northern roads, would have amounted to 32.68%.

In addition to the reduction of the company's Minnesota intrastate revenue, the enforcement of the Act would have compelled the reduction of its Minnesota

interstate revenue 19.85%, and substantially all of its other interstate revenue 24.71% on soft coal. On hard coal the percentages of reduction would have been somewhat less.

Exhibit 14 A, Tittemore, and his testimony in connection therewith indicate that the total revenue of the company for the transportation of soft and hard coal, wheat and flour, lumber, coarse grain, flax and millet, cattle, hogs and sheep moved, intrastate in Minnesota, and in interstate commerce for the year ending June 30th, 1906, was $1,528,087.83; that the schedule of commodity rates complained of if applied to that business would have affected about two-thirds of such *total business* or $999,770.14, and would have reduced revenue thereon 14.55%, or $145,492.22, which reduction, added to reductions made to meet the voluntarily reduced rates on Northern lines, would have amounted to 17.98% of the revenue, or $179,709.80, of the business for that year.

Finding 29 of the Master's Report (p. 215, Vol. 1 N. P.) states the effect of the rates complained of if applied to the interstate business of the whole system. The resulting losses would be as follows:

Interstate commodities	$4,193,283.04
Interstate merchandise..	4,119,761.96
Interstate passenger....	1,444,955.35
Total Interstate.....	$9,758,000.35

and if like percentage of reductions in other states be made, the resulting losses would be as follows:

Commodities	$198,540.51
Merchandise	952,644.83
Passenger	990,908.82
Total Intrastate	$2,142,094.16
Total Interstate and Intrastate	$11,900,094.51

The evidence supporting these findings is uncontradicted and the Master's determination is unchallenged.

In the Great Northern Case the computations necessary to state the losses which would have resulted from the application of rates made on the basis of the rates complained of to the long haul interstate business of the company, and the losses which would have resulted if other states reduced rates on intrastate business therein like percentages, as was done in Minnesota, have not been made, but Exhibit 29 Parker, 6 G. N. case does show the loss which would result if the same percentage of reduction ordered by the Commission in the Merchandise Orders complained of, and by the Commodity Act complained of were applied to the interstate business of the Company in Minnesota and other States and that the amount of such losses, in such case, would be more than $9,000,000.00 per year.

In the Minneapolis & St. Louis case it is shown that on the business of that company for the fiscal year ended June 30, 1906, the prescribed class rates would have reduced the revenue from its intrastate Minnesota business $33,367.30. (Exhibit 21 Scott, Vol. 6 M. & St. L., and testimony, Vol. 3, page 770, et seq. M. & St. L.).

The losses that would have *unavoidably resulted* to the Minneapolis & St. Louis Co. from the enforcement of Chapter 232, on the basis of the tariffs which it was

about to put into effect when the restraining order in this suit was served on it, amount to $145,492.23 on the volume of the business for the year ended June 30, 1906. (See Exhibit 14 A Tittemore, Vol. 6 M. & St. L.).

The 2-cent passenger fare law would have reduced the Minnesota revenue, intrastate and interstate, of the Minneapolis & St. Louis Company $146,824.00. (See Exhibit 13 Scott, Vol. 6 M. & St. L.)

We submit that the losses shown in the Record and above referred to, in connection with the other facts to which attention has been called, establish as conclusively as such a matter can ever be established that the rates complained of are unreasonable and too low in and of themselves.

Note:—The Master's calculations are based on the amount of revenue actually received.

All of the rates complained of except those prescribed by Chapter 232 were in effect on the Northern Pacific and Great Northern companies during the fiscal year ended June 30, 1908, on the business of which the Master's detailed calculations are based. The net earnings, over and above operating expenses and taxes, of the intrastate business are shown, together with the rate of return which the same would yield upon the property value assigned thereto. In like manner such net earnings from each class of the intrastate business and such rate of return are shown. He also calculated what such net earnings and rates of return would have been on the intrastate business in Minnesota if Chapter 232 complained of had been in effect during the year

ended June 30, 1908. That is to say, his report shows such net earnings and rates of return on two bases, namely:

(a) On the basis of the intrastate revenue actually received;

(b) On the basis of what the amount of such intrastate revenue would have been if the enforcement of Chapter 232 had not been enjoined.

In the Minneapolis and St. Louis case the Master's detailed calculations are based upon the results of operation in the year ended June 30, 1907, and inasmuch as the merchandise rates and passenger rates were not in effect during the whole of that year, and the commodity rates complained of were not in effect at all, he deducted from the actual earnings what the evidence showed without contradiction would have been the losses to intrastate revenue if all of the rates complained of had been in effect during the year. He calculated the net earnings, over and above operating expenses and taxes, on the intrastate business and the rate of return thereon, and also such net earnings and the rate of return upon each class of the intrastate business in Minnesota.

(See table attached to page 264, table attached to page 270, and pages 276-280, Vol. 1, N. P. Case.)

VI.

A rate of return to be reasonably adequate must be higher than seven per cent upon the value of the property used, at the time that it is used, to render the services covered by the rates.

Assignment of Error 22, page 448, Vol. 1, N. P. case is as follows:

> "The court erred in finding that a railroad is entitled to a return of 7% net on the value of the property devoted to the public use."

Notwithstanding the testimony of Charles F. Staples, a member of the Railroad & Warehouse Commission and one of the appellants herein, which is hereinafter referred to, the defendants contended before the Master and the Circuit Court that a return at the rate of 7% of the value of railroad property used in the public service in Minnesota is excessive.

The Master and the Circuit Court found that a rate of return of 7% on the value of the property used is not more than these companies are entitled to earn, and appellants by their assignment of error challenge directly the finding below on this point.

The question for discussion here may be stated thus: The proper base having been established,—What is a reasonable rate of return?

This question must be answered in the light of the facts proven in these cases and of facts which the court may notice without proof, and of the decisions in cases in which the subject is considered.

Let the facts be referred to first.

The Evidence.

The appellants offered no proof on the subject. The complainants however, in cross-examination of the appellant Charles F. Staples, member of the state Commission, took his opinion on the subject, which was to the effect that the companies are entitled to such rates as will *assure them from year to year 7% upon the value of the property as such value may be found by the Court.*

While it may be true that the appellants are not bound by this testimony as strictly as a party would be by his own admission in a case not directly involving the public interest, yet his statements must be taken to express the views of all the appellants because no word of evidence was offered by any of them in opposition to what he said. His good faith was not, and will not be, questioned. His long experience as a member of the Commission since January 1, 1900, entitles his opinion to the approval of his official associates and the public represented by him in these cases. His answers were not given hastily or without full consideration and preparation, nor can it be claimed that his solicitors or associate defendants were taken by surprise by his testimony. He carefully expressed his deliberate views, amplified them by illustrations, and supported them by the results of much experience and observation.

The precise question, calling for his opinion as to what rate of return on value of property used in the public service is reasonable, was propounded to him before a noon recess but was not answered until the afternoon session. He had opportunity to confer with

his associates and solicitors in the framing of the answer which he gave, and because he ought to have done so, we may justly assume that he did.

We invite the Court's attention to the *very language* of the questions and answers on this point. (See p. 2849 et seq., Vol. 6, N. P. case.) His testimony amounts to an official declaration of the policy of the State as represented by its state commission, and in view of the fact that his associates, defendants, failed to oppose the views expressed by him, it should be taken as their concession.

Mr. Staples' Testimony.

At page 2849 of the Record the following question was asked:

> Q. Well, what do you think would be a reasonable rate of return upon the value of property of the best and most favorably situated railroad in the state of Minnesota, what rate per annum, net to the people who owned it?

After much colloquy and an objection interposed by his solicitor, the Master decided that the question was proper cross-examination, and thereupon, before the answer was given, recess was taken until 2:00 o'clock in the afternoon. (See page 2852). On resuming the taking of testimony in the afternoon, it was said:

> "Q. There was a question pending, Mr. Staples, when we paused at noon.
>
> A. Perhaps you had better read it. (Question read by the Reporter). Well, I have said, as you indicate in that question, that the pur-

pose and intention of the Commission was to establish a schedule of reasonable maximum rates. (By this he referred to the statement made by complainants' solicitor in colloquy with defendant's solicitor. See page 2851). Now, the interpretation of that word 'reasonable' is, first, that the relation between the rates upon the different roads should be, as nearly as possible, reasonable and that the return or revenue which the rates would result in giving to the various companies should allow them, what the definition implies, a reasonable earning *upon the value of the property necessarily employed;* and I take it that that last definition is what you are seeking an answer to.

Now, your question, as I recall it, is directed to one of the best managed and strongest properties. I would rather not confine my answer to a road in that position, because, as I indicated this morning, I recognize that a road occupying that position—I don't say is entitled to more, but necessarily and naturally would, earn more than perhaps might be construed to be a reasonable rate upon that road, but I say that, for this reason, *it is absolutely impossible, in my judgment, to maintain a very marked difference in rates upon the different roads, where they come into competition one with another, and as I have indicated in my testimony already,* roads, even though they are not paralleling, are meeting one another at junction points, which influences rates in a degree, and therefore I want to confine my answer to a road reasonably situated with reference to its command of traffic and reasonably managed; *and my answer would be that, when you confine it to a road of that character, after the courts have found what is the value of the property necessarily involved or used in the transaction of the business for which the company is organized (that is, the transportation business) I would feel that it ought to be assured*

of as much as seven per cent. That is, the seven per cent, of course, applies to this value, and necessarily implies that all fixed charges and other proper costs of management, operation, etc., shall first be met.

Q. Including depreciation, etc.?

A. Yes, sir. Yes, sir, all other proper costs. In other words, I hold, in a general way, as I view the railroad problem, that a company is entitled to *keep up its property out of the earnings;* that is, that that is not a proper charge against capital. * * *" (Pages 2851-2853).

* * * Q. * * * It is recognized, is it not, that railway business, upon change of general business conditions, is subject to fluctuations, ups and downs, as regards tonnage and earnings both:

A. Yes, sir.

Q. And those fluctuations are often very sharp and marked and serious?

A. Yes, they are, for different periods of time.

Q. And it is very difficult, is it not, to foresee, with any reasonable degree of certainty, the coming on of a period of depression or the extent of such depression?

A. Yes, that is difficult, too. In this country, necessarily that depends very much upon the crop conditions. (Page 2855).

* * * Q. * * * Does not the fact of uncertainty with respect to the volume of business on earnings in the railroad business make it necessary, in order to be just, to promulgate rates calculated to yield a higher return than would be the case were it not for such uncertainty?

A. Yes, I do think so.

Q. That is, it is proper to say, is it not, that in the business of railway companies, there is an element of uncertainty of quite a degree? When we are using adjectives it is not certain we understand each other just aright, but

it is quite a substantial factor bearing upon railroad investments and returns from such investments, is it not?

A. That is undoubtedly a fact.

Q. So therefore, a higher rate of return is justified than would be the case in a business not subject to such uncertainties?

A. Yes, yes, oh, yes, indeed; yes, indeed.

Q. That is to say, money seeking investment will accept a certainty at a comparatively low rate—

A. Yes.

Q. —but, as the element of uncertainty increases, the rate demanded to procure the money for such investment also increases; they keep step, do they not?

A. Yes. And that is clearly indicated, at least to my mind, when I say they should be afforded a rate which is very much larger than the money actually costs a good substantial company in case they borrow it, or in case a man invests his money in some perfectly safe and sure investment. (Page 2856).

Q. * * * In your answer in which you fix seven per cent as the reasonable rate of return, I understood you to intend, and I think you clearly did intend, *to assume the base to be such value as the Court would determine to be the proper base to compute the return upon?*

A. Yes.

Q. You yourself did not undertake to define that?

A. No. And you have unintentionally misstated my answer; it was that the company, using the definition of the company itself, *ought to be assured of seven per cent; I did not mean to intimate or indicate that it should be limited to seven per cent.*

Q. Well, that seven per cent was reasonable is what you meant?

A. Yes, and that it ought to be assured.

Now, that means, not this year, last year, one year—

Q. On the whole?

A. Yes, sir.

Q. Taking all the years as an average?

A. That my opinion was that it ought to be *assured* of that. Now 'assured' does not mean that they have not got to meet just such conditions as you spoke of, possibly, but that, on the whole, they will be evened up and that the State should not (when I say the State, I refer to the governmental authority) should not contend for a minute that, because a company is getting,—if seven per cent is held to be reasonable,—is getting it this year, next year because of some calamity or misfortune, it results in giving but two or three per cent, it is perfectly justified in going on and claiming that seven per cent is all that they should have the next year. In other words, that, so far as it is possible to do so, that should not be exactly a guaranty, *but the idea is that they are entitled to that much, that they ought to have that much;* that the investment, the character of the investment—

Q. Is this thought a proper one, in justification of your opinion, that the rates should be fixed so that in good times or times of prosperity they would be able to provide for the poor times, the fat years provide for the lean years, by laying away a surplus from the good years to help them out in the bad one?

A. Yes, it is. And, amplifying that a little, I would say that the governmental authorities should recognize the necessity and be willing to allow such increase in the rates as is reasonable to make at stated times when it is deemed necessary; but that policy should be overcome, so far as possible, by keeping the rates more uniform and more stable, because there is very serious objection to the changing of rates.

First, it affects business conditions far more than the average person appreciates; second, you would increase the rates just at the time when the public could stand it the least.

Q. Yes, that was what I was about to say. That is, if the rate of return was made to depend upon a change of the rate upward coincident with the falling off of the business, it would aggravate a very bad condition, would it not?

A. Yes; it would have, as I said, two serious effects; one would be to bring an added tax upon the public, the people served; another would be the fact that a considerable change in the rates on a great many commodities affects business very seriously. * * *

Q. So, in other words, the rates should not be fixed so low by governmental authority that, on the average, the reasonable rate of return which you have expressed at seven per cent would not be assured notwithstanding temporary depressions, such as are reasonable to be foreseen in the light of the past?

A. Yes. My answer is yes, if I understand your question. (Pages 2860-1-2).

This testimony, coming as it did from one of the appellants, is we think sufficient to render it unnecessary for us to support the findings of the Master and the Lower Court to the effect that these companies are entitled to earn (if they can under existing business conditions) sufficient revenue to yield seven per cent return upon the value of the property used to render the service covered by the rates, but inasmuch as neither the Master nor the Court treated the testimony above referred to as an admission of a party, or as a concession that the matter was not in controversy, we shall, because of the specific assignment of error, call

attention to the other evidence in the record bearing upon the subject and to the authorities.

There was received in evidence a statement compiled from the official report of the United States Comptroller of the Currency, as follows:

"Average results of the business of the national banks of the United States, for the period of thirty-eight years, from 1870 to 1907, inclusive, as shown by the official report of the Comptroller of the Currency to the Speaker of the House of Representatives, for the year 1907. (Page 240).

Capital	$578,251,374
Surplus	205,100,039
Capital and surplus	$783,357,413
Dividends paid	50,660,236
Net earnings	66,647,167
Dividends to capital	8.76%
Dividends to capital and surplus	6.47%
Net earnings to capital and surplus	8.58%

Average results of same business for 10 1-3 years, March 1, 1897, to June 30, 1907: Computed from same statistical table.

Capital	$672,072,739
Surplus	319,604,317
Capital and surplus	$991,677,056
Net earnings	$97,640,179
Net earnings to capital and surplus	9.84%

(See Vol. 8, pages 4248-4249 N. P.)

It will be observed that for the period of 38 years, 1870 to 1907, net earnings to capital and surplus of the national banks were *8.58%*.

And for the 10 1/3 years from March 1 1897 to June 30 1907 the net earnings to capital and surplus were *9.84%*.

It cannot be contended that the risk attending the business of national banks is at all comparable with the risks attending the railroad business. In the business of lending money merely, the risk of loss is reduced to a minimum. The bank selects its borrowers and security and may if the business becomes unprofitable withdraw from it and invest its money elsewhere. The return to the bank is regular and certain. It is paid for the *use of capital alone*. No element of labor enters into the production of the result.

Testimony of Mr. Hill.

In the testimony of Mr. Hill, direct examination Vol. 3 G. N. pages 1320 et seq., cross-examination pages 1341 et seq., is to be found a statement of many of the elements to be taken into account in determining the reasonableness of a rate of return on railroad property, and many reasons why such rate should be higher than the rate of interest allowed by law or usually paid on loans or other safe investments in other enterprises. In substance he said:

> You can readily see by any close investigation that an investment in a railroad like the Great Northern in the State of Minnesota is attended with more risk than any large investment in the State. You may take a bank for the purpose of illustration. It has its money

under its control, and if it makes a loan it has the security under its control, and if it does not like the business,—if it does not find it profitable—it can close out and liquidate its assets and take the money and go into any other business. So can a manufacturer. A manufacturer of flour or lumber or iron or boots and shoes or clothing, or anything, he may run his factory one day in the week, or six hours a day, or twenty-four hours in a day, or he needn't run it at all, he can close it up and go out of business. So with the merchant. He can carry on his mercantile business as long as he likes, and he can stop when he likes. When a railroad is built and the money is invested, it is built under the authority of the State, and it carries an obligation to furnish a reasonable service to the public. That service *must* be furnished, whether it pays any profit or not, and you cannot take up the rails, and cannot abandon it. The public would ask the Court to intervene if the service was not furnished, and the Court would probably appoint a receiver, and receivers' certificates would be placed ahead of any security you had until the property was wiped out,—I don't know what the Court would do then. But the risk is so much greater in railway enterprises,—and it is constantly increasing—that is the reason why railway securities do not command the price they did. (1319, G. N.)

He spoke of the dependence of railroads upon crop conditions and said in substance:

The wealth produced in the State is very largely dependent upon the value of the crop; the ability of people to buy goods—merchandise, machinery, commodities of every description—depends upon ability to pay for them; fortunately for the people on the land in Min-

nesota the prices of grain have advanced in the last two or three years, because consumption is overtaking production, but the yield in Minnesota has very, very materially and steadily decreased; this is no longer doubtful, but an accomplished fact. It has passed from the condition of being a risk to an accomplished loss. (1320 G. N.)

He spoke of the effect of financial depressions upon the revenue of railways, and in substance said:

The destruction of confidence in business throughout the country is the cause of such financial conditions as existed in the autumn of 1907. Business practically collapsed. I think business of every description ebbs and flows. The elements that caused reduction in business and that culminated in October began to show themselves in May and June, but they did not affect the volume of business as soon as that. The spark—as you might say—that caused the explosion was the failure of some banks and trust companies in New York, but the condition was ripe for what occurred—and all over the country it very soon made itself felt. (1321 G. N.)

These conditions of stringency have an effect upon railway earnings and reduce them very materially. That was true here in Minnesota on the Great Northern as it was in other parts of the country. When people stop buying, commodities stop moving. Railroads are subject to conditions of that kind from time to time. A crop failure has a very material effect upon the incomes of railroads. It is not only the loss of the grain, but it is the purchasing power of that grain in the different communities where the grain is raised. (1322 G. N.)

A manufacturer controls his factory, and the only expense he would be put to is insurance

> and a watchman and the loss of income; but the railway has to furnish its service, that is, to furnish a certain service, a minimum you might call it, whether there is anything to move or not, except the mails and two or three passengers or a dozen or fifteen passengers. And so with moving freight. (1323 G. N.)

He spoke of the effect of competition upon railway investments, and said in substance:

> I don't know any tonnage in the State that is not tributary to or competitive with other lines. There might be one or two stations on the Warroad line where you would think competition was not great, but the competition at Warroad or the Lake of the Woods is, in effect, with the water and the Canadian roads, so that competition exists all the way through. The difference between the long haul and the short haul applies. You can't take the map and find a station that I can recall where there is no competition. (1323 G. N.) Then there is always the competition that after you have built up a country and made it productive somebody else will come in and divide it with you. That is a risk. We have carried passengers and settlers into the Red River Valley in order to get them on the line, and when the selling price of land was $5.00 or $6.00 an acre we rebated, I think, half the price for every acre they would get under cultivation within a given number of years, so as to get settlers in there. (Vol. 3, page 1324.)

He said there was no element of monopoly in the business of the Great Northern road, and that there is not any locality where the business is not competitive, and largely so. All railroads have a monopoly of carrying passengers as against a stage coach or as against

going on foot, but so far as the exclusive right of carrying commodities or carrying people they have not. They can go by one road or another. (1324, G. N.)

Referring to the effect to be given to the conditions mentioned, upon considering what would be a fair rate of return upon railroad property such as the Great Northern in this State, he said:

> If it was true that a railroad by any authority was forbidden to earn any more than a banker or a manufacturer earned, and that fact became known, I don't think you could get anybody to invest in railroads in Minnesota. In fact, there isn't anybody *now* that on account of the business in Minnesota is making any investments of that kind. They may be seeking an outlet for business from somewhere else.
>
> But if the money is invested in a railway, bearing in mind the service that it is obliged to render, bearing in mind that it has to take all the risk of its making any net earnings, and, in a new country, like this, of building up the country, and of the country's maintaining its ability to sustain its productivity, its fertility—all that risk is taken by the railway, and you can't draw your money out, you can't close it up as you would a mill or a factory or a store or a bank or anything else, your investment is there, and you have to prosper with the country or be poor with it and suffer with it, whatever is its fortune is your fortune, and you take all of the risks, not only the merchant's risk, the manufacturer's risk, the farmer's risk, the lumberman's risk, the risk that if the fire sweeps the forest and burns it down that much tonnage is gone and you would have to wait a long time before the trees would grow again. (1341-1342 G. N.)

He pointed out that rate reductions—the rate wars—arising from competition was an additional risk (1342-1343.)

He pointed out that the investor in railroads had nothing guaranteed to him, and that men in any other line of business were not compelled to do any business; that the railroad is the only business that is compelled to perform the service whether it pays or not. He said:

> If it is an unreasonable rate (the rate charged by a railroad) in the opinion of the Court, he must lower it to what is a reasonable rate; and, on the other hand, if it pays no profit, he is under obligation to operate and I think that any examination of investments of a large kind would show that the railroads of the United States have not earned, as a rule, half the return that other chief investments have earned. (Vol. 3, 1344 G. N.)

The Authorities,—and Reasons Why Railways Are Entitled to More Than Seven Per Cent Upon the Value of the Property Used in the Public Service.

It is clearly established that the state-made rates in these cases do not and will not yield sufficient revenue to pay a just and reasonable rate of return on the value of the property used in rendering the service covered by the rates. The complainants at the trial did not attempt to show precisely what such a rate of return should be. It is considered that this question is one for the Court upon the evidence and upon the general business conditions in the country where the railways are situated, of which the Court will take notice without proof.

To be fair and reasonable a return upon railway property judiciously created for the service of the public could not, under any circumstances, be smaller than the average of those upon investments in business enterprises in general in the same regions, taking into account the hazard attending the railway business compared with that of the other enterprises. Measured by this standard a rate of return upon the value of the railway properties in the states between the Great Lakes and the Pacific Coast could not be less than eight per cent per year and be regarded as fair or reasonable. A rate of eight per cent would be lower than those regarded fair for business operations in that part of the country and much less than the average of profit commonly earned. We contend that to impair by law the right to earn at least eight per cent per year upon their fair present value—if commercial conditions should make that rate possible—would be to deprive them of that right in their properties which the Constitution protects against any act or law of the state to all other property owners. To be on a parity with business enterprises in general and in the Northwest, these companies would have to earn probably not less than ten per cent annually upon their full value.

It is now too well settled to require the citation of authorities or to be a subject of profitable discussion that *some return* is not sufficient. The state may not fix rates so low that the revenue yielded therefrom shall not be sufficient to pay a fair reasonable return. What rate of return is fair and reasonable is a question of fact and depends upon the circumstances of the particular cases in hand. Sound public policy

suggests that the State ought to permit the maintenance of a schedule of railway rates in Minnesota sufficient to yield returns very substantially higher than the rate of interest usually paid on loans or other safe investments or earned in lines of business not requiring large amount of labor or high degree of skill and diligence in management, because the welfare of the State depends in great measure upon the efficiency of existing railroads and improvements and additions thereto from time to time to meet further demand for rail transportation.

Judge Lochren, in passing on complainants' application for temporary injunction, Vol. 1, page 106, N. P. case, in the course of a reference to the interest of the public in an efficient railroad service, said:

> "And it would certainly be a very great calamity if these railroads were dealt with in such a way as to destroy their efficiency and usefulness to the inhabitants of the state. But notwithstanding this, there is, of course, a danger that the mass of the people, looking upon these large aggregations of wealth, seeing occasionally a person who is reputed to be or who has become wealthy on account of his connection with these railroads, and that they are getting considerable amounts of money from the people of the state as compensation for the services that they are performing, will manifest a disposition to reduce this compensation; to save to the people a certain amount of what they have to pay when they patronize the railroads as passengers, or have commodities of any kind to ship upon the railroads. It is quite natural that they should want to have those charges reduced to the lowest point, at any rate, which would be consistent with keeping up the efficiency of the railroads and the

advantages which they are receiving from them. There is a danger that this feeling of selfishness may lead them too far, and reduce this compensation so much that it will not enable the railroads to serve them with efficiency—to keep up their roadbed, culverts, bridges and everything so that they will be entirely safe for the transportation of passengers and freight, and to keep the rolling stock in the best state of efficiency, and enable them to provide the best service attainable. And that is exactly what those corporations are required to do; they are required to exercise the highest degree of care in relation to the transportation of passengers, and a high degree of care in relation to the transportation of freight, and it is certainly for the interests of the people that they should be enabled to do this; and it would be a very short-sighted policy which would reduce the compensation of these railroads to a degree that would disable them from performing these services fully and fairly for the benefit of the people."

Judge Lochren's familiarity with Minnesota's most important affairs extended back to the territorial days. His unexcelled powers of observation and analysis, coupled with his great judicial ability and calmness of judgment, give great weight to what he here said.

Indeed, it cannot be doubted that it would be very short-sighted policy to fix railroad rates so low as to deprive the companies of power efficiently to discharge their duties to the public. No one ought to be required to donate money, or furnish it without reasonable assurance of reward commensurate with the risk involved, and fair when compared with returns being yielded in other lines of business no more precarious, to provide facilities for or to carry on the

transportation business necessary for commercial success and development.

While the facts and circumstances of each particular case must control the determination, and the standards fixed in other cases may not be taken as the measure of reasonableness here, yet judicial utterances in other cases may serve as a valuable guide to the truth here.

In *Wilcox v. Consolidated Gas Co.*, 212 U. S. 19, this court expressed the opinion that that company was "entitled to six per cent on the fair value of its property devoted to the public use." To the end that the considerations which conditioned the measure of reasonableness of return in that case may readily be compared with the facts before the court here, we quote from the language of the opinion, as follows:

> "There is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprises. Such compensation must depend greatly upon circumstances and locality; among other things, the amount of risk in the business is a most important factor, as well as the locality where the business is conducted and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them. There may be other matters which in some cases might also be properly taken into account in determining the rate which an investor might properly expect or hope to receive and which he would be entitled to without legislative interference. The less risk, the less right to any unusual returns upon the investments. One who invests his money in a business of a somewhat hazardous

character is very properly held to have the right to a larger return without legislative interference, than can be obtained from an investment in government bonds or other perfectly safe security."

Bearing in mind the considerations referred to and the principle laid down by this court that the amount of risk in the business is a most important factor, and that the Gas Company in that case had a practical monopoly and is the most "favorably situated gas business in America," dealing in a commodity now necessary for the welfare of the public, with a business long yielding substantial and regular returns and promising with almost absolute certainty to continue so to do in the future, in short, the most favored locality and the best situation conceivable for a public service enterprise, and that six per cent is the rate to which it is entitled, it seems that when location, history, and risk, arising from a multitude of causes are taken into account seven per cent must be too low a rate of return for the use of railroad properties such as those involved here.

In Minnesota the legal rate of interest which is implied by the law in the absence of contract is six per cent. No matter how secure the loan, whether payable on demand or at a fixed time, the implied undertaking of the debtor is to pay six per cent for the use of the amount owed. And by contract the rate of interest may be ten per cent per annum. (See R. L. Minn., 1905, Section 2733.)

A mere money-lender, who selects his own debtor and dictates the terms of and security for the payment of the debt, is entitled to ten per cent of his loan

free from the restraints of the usury laws which, like rate laws, are made by the State in the just exercise of its powers to prevent a party occupying an advantageous position from imposing an unfair contract upon one in a less fortunate position and unable to protect himself from unjust exactions. How may it justly be said that the owner of railway property, subject to most onerous duties to the public, requiring high intelligence and unflagging vigilance because of the difficulties and hazards of the business, is not entitled, free from legislative interference, to a higher rate of return than the lender of money.

In *Ames v. Union Pacific Railroad Company*, 64 Fed. 165, 186, 187, it appeared that counsel for the state authorities claimed that the cost of reproduction, or the value of the road, in Nebraska did not exceed $20,000.00 per mile; it further appeared that it was bonded for $70,468.00 per mile; that the local freight earnings as reduced would have paid but their proportionate share of eight per cent on the conceded value; and the rates were held confiscatory. On this point Mr. Justice Brewer said:

> "Again, there is a volume of testimony as to what it would cost to reproduce these various roads; such amount being, as claimed, a fair test of the present value. I shall not—now, at least—attempt to make any comparison of this testimony but, for present purposes, content myself with taking this concession from the brief of the defendants' counsel:
>
> 'There is sufficient testimony in this record to justify the conclusion that the average cost of reproduction or value of the roads in the state of Nebraska does not exceed $20,000 per mile, including right of way, railway tracks,

equipment, station houses, telegraph lines, and terminal properties.'

The present value of the Union Pacific Railway property in the state, at the sum named in this concession, would be $9,340,000. To pay six per cent on this conceded value would require, as its contribution to the earnings from the local freight, $42,030. Or, in other words, upon the conceded value, the local-freight earnings, as reduced by house roll 33, would have paid but their proportionate share of eight per cent interest. If a proportionate reduction in rates was made by other states and by congress (and, of course, such a reduction would be equally within their power), so that the total net earnings of the road would be but eight per cent on this conceded value, obviously only the holders of the first lien would receive full interest on their indebtedness, while the holders of subordinate liens would receive but a fraction thereof. All the stockholders would go without compensation, and soon their investment be swept away by foreclosure proceedings."

It is not apparent that there is any good reason why the amount of the interest charge on account of bonded or other indebtedness should be used to increase the amount of net earnings (over operating expenses and taxes) to which a railway company is entitled as against a state law reducing rates, and it therefore seems that the Circuit Court (Justice Brewer and Judge Dundy) was of opinion that the Union Pacific Co. was then and there entitled to at least eight per cent per annum as a return on the value of its property used in or chargeable to its intrastate business in Nebraska,—the apportionment being made on the gross earnings basis.

In *Pennsylvania Railroad Co. v. Philadelphia County*.

Supreme Court of Pa., 68 Atl. 676, the court found that the Act of April 5, 1907, prescribing maximum passenger fares (two cents per mile) for a railroad company, was unconstitutional and void because the rates were confiscatory.

The final determination of the case depended upon an answer to the question—What is a reasonable rate of return,

The Court below (the Court of Common Pleas, Philadelphia County) held that:

> "Public service corporations in Pennsylvania are entitled to look for a rate of return, if their property will earn it, *not less than the legal rate of interest;* and a system of charges that yields no more income than is fairly requisite to maintain the plant, pay fixed charges and operating expenses, provide a suitable sinking fund for the payment of debts, and pay a fair profit to the owners of the property cannot be said to be unreasonable."
>
> Citing *Brymer v. Butler Water Co.*, 179 Pa. 331, 36 Atl. 249, 36 L. R. A. 260.

The Supreme Court held that the Trial Court committed no error of which appellant could complain, and said:

> "The presumption in favor of the prescribed rate is no more than the ordinary presumption in favor of the constitutionality of acts of the assembly. It has no special strength or sanctity, and, in view of the public history of the passage of the act of 1907, without investigation and in obedience to a popular agitation for the same rate, not only in Pennsylvania, but over the whole country, it might well be said that very slight evidence would rebut the presumption in this case. What was said in *Brymer*

v. Water Company was that the company was entitled to a fair return, not less than the legal rate of interest. *In naming the legal rate, the court was naming a minimum, not a maximum rate.* Six percent is a legal estimate of the legitimate profit from the ordinary safe use of money. * * * What is a fair profit is a complicated and difficult question; but there are certain elements that are plainly to be regarded to avoid injustice, such as the original investment, the risks assumed at that time, the returns as compared with other enterprises as nearly similar as may be, the cost of maintenance and improvement, the prospects of increase, and the present value in view of the preceding elements. Injustice is done by anything that fails to consider these and to deal equitably with the private as well as the public interests involved. It is not necessarily regulated by what others would now make the venture for under the present circumstances and with present knowledge. The public having long reaped the incidental profits from the development of the country by the enterprise and venture of capital in the increased value of land, the opening of new and wider markets for crops and manufactures, and the facility of intercourse and exchange for persons and property, the courts should not now ignore this aspect of the subject in considering the question of injustice to the incorporators. In view of the evidence before the court and the proper elements with which it must be considered, the court below certainly did not err against the appellant in finding that the statutory rates of fare would do injustice to the corporators."

In the *City of Spokane v. Northern Pacific Railway Co. and other railway companies,* 15 Interstate Commerce Reports, page 417, the Interstate Commerce Commission said:

> "Capital will seek investment in railways for the same reason it does in other enterprises, the amount forthcoming depending upon the attractiveness of the investment. This in turn is determined by two considerations, first, certainty; second, amount of probable return. If the government of the United States were to guarantee an income of four per cent on all money invested in railroads, an abundance of capital would be offered. If that government were to impose upon our railways such rates that not exceeding four per cent could be realized, without giving a guarantee that anything whatever should be paid, it would be exceedingly difficult to procure funds for railway development.
>
> *It seems certain than in the immediate future very large sums of money must be expended in improving and extending the railroad facilities of this country, and it is therefore extremely important that railroad investments should be made sufficiently attractive so that the necessary money for these improvements can be obtained.*
>
> It is not necessary today that opportunity should be given for the accumulation of enormous fortunes by speculation in and manipulation of railroad securities, but it is necessary that railroad capital should be assured of fair treatment and of a suitable return; otherwise, *this government will find itself confronted with the problem of providing such railway capital from its own resources,* for it is absolutely essential that railroad development keep pace with industrial and commercial requirements."

Under date of Nov. 1, 1911, the Railroad Securities Commission (appointed by the President pursuant to Sec. 16 of the Act of Congress approved June 18th of the same year) made its report. At pp. 32 and 33 thereof it is said:

"28. AMOUNT OF ADDITIONAL CAPITAL REQUIRED.

There is a widespread belief, based on imperfect examination of the evidence, that the amount of capital needed for the future development of our railroad system is small in proportion to that which has been required in the past; that the profits on such added investments of capital are reasonably well assured; and that we can therefore fix attention predominantly if not exclusively on the needs of the shipper without interfering with the necessary supply of new money from the investors.

It is quite possible that the building of additional railroad mileage will be far less rapid in the future than it has been in the past, but the capital needed for the development and the improvement of the mileage already existing is enormous, even if we built no new mileage at all. The outstanding stock and debt of the railways in the United States averages less than $60,000 a mile of line. This figure is bound to be greatly increased in the immediate future. As our population grows denser, we shall need more and more to approximate European standards of construction by the increased amount of double track, the abolition of grade crossings, the development of station facilities both for passengers and for freight, and many other improvements scarcely less fundamental. While our railroads are perhaps even better equipped than those of Europe for the economical handling of large masses of

long distance freight, they are far from being adequately provided with appliances to secure the convenience of the public or the safety of passengers and employees. The cost of all these things is very great. The average capitalization per mile of railroads in Germany is $109,000, in France $137,000, in Belgium $177,000, in Great Britain $265,000; and, contrary to the commonly received opinion, much of this excess of cost as compared with American roads, is due to other causes than the price of real estate—an item in which our companies have had a great advantage. The cost of European roads has been largely due to improvements which we have not yet made and many of which we must make in the future as population grows denser. The thousands of millions of dollars needed for these purposes must be raised by the sale of securities.

29. PRESENT RETURN AND FUTURE SECURITY.

Neither the rate of return actually received on the par value of American railroad bonds and stocks today, nor the security which can be offered for additional railroad investments in the future, will make it easy to raise the needed amount of capital.

The ratio of interest and dividends to outstanding bonds and stocks of American railroads is not quite four and a half per cent in each case. The average ratio of dividends to the capital of national banks is between ten and eleven per cent. If it be objected that the value of the stocks of our railroads is in considerable measure due to the growth of the community rather than to the cash originally invested, and that the bonds and stocks of railroads should therefore be compared with the combined capital and surplus of the national banks, we find that these banks have for the last three years maintained an average ratio

of dividends to capital and surplus combined of over six and a half per cent. If we look not at the sums divided, but at the sums earned, we find the same difference of profit in favor of the banks.

Nor can the security which most of our railroads offer be regarded as exceptional. The underlying bonds of the older systems are doubtless secure. It is not probable that even a grave commercial crisis will affect the return of a trunk line first mortgage. But very little of the new capital can be raised on securities of this kind. Most of it must come either from bonds which will not be a first lien for many years, or from new issues of capital stock. The investors in these securities, and especially in stocks, take risks which cannot be accurately forecast. Apart from probable fluctuations in traffic and possible increases in cost of operation, new inventions may at any time render much of their present plant antiquated. The substitution of electricity for steam is but a type of the many changes which railroads may be compelled to make, any one of which might involve large additions to their cost without the assurance of corresponding additions to their return.

30. WHAT CONSTITUTES A REASONABLE RETURN.

We hear much about a reasonable return on capital. A reasonable return is one which under honest accounting and responsible management will attract the amount of investors' money needed for the development of our railroad facilities. More than this is an unnecessary public burden. Less than this means a check to railroad construction and to the development of traffic. Where the investment is secure, a reasonable return is a rate which approximates the rate of interest which prevails in other lines of industry. Where the future is uncertain the investor de-

mands and is justified in demanding, a chance of added profit to compensate for his risk. We can not secure the immense amount of capital needed unless we make profits and risks commensurate. If rates are going to be reduced whenever dividends exceed current rates of interest, investors will seek other fields where the hazard is less or the opportunity greater. In no event can we expect railroads to be developed merely to pay their owners such a return as they could have obtained by the purchase of investment securities which do not involve the hazards of construction or the risks of operation."

In the recent case of *Missouri, Kansas & Texas Ry. Co. v. Love et al.*, in the Circuit Court of the United State for the Western District of Oklahoma, 177 Fed. 493, 501, one of a number of suits brought by the Railroad Companies to enjoin the enforcement of the passenger rate of two cents per mile, prescribed by the Constitution of Oklahoma, and certain freight rates prescribed by the Corporation Commission of the State, on the hearing of an application for a temporary injunction decided February 10, 1910, Circuit Judge Hook, in the course of an exhaustive statement of the rules governing such cases considered whether the rates in question were reasonable, and stated that the question involved a determination of the value of the property devoted to the use to which the rates applied, *the measure of a reasonable rate of return on that value*, and whether the rates allowed to be charged are sufficient to that end, and on the point under discussion here said:

"Rates should be just both to the public and the owner of the railroad (*Smyth v. Ames*, 169

U. S. 466, 544). It does not appear in these cases that the roads were ill conceived, greater in extent than they should be, unduly expensive in construction, or that they are not operated wisely and economically. It therefore does not seem that rates producing no more than a reasonable return on their fair value could be unjust to any one. In fixing the measure of return upon property devoted to public use regard should be had to the character of the business, the locality and the risk, whether the return will be uniform and secure, whether the patronage is steady or fluctuating and quickly responsive to financial and commercial changes; interest rates legal and contractual and the rates customarily sought and required in like investments in the locality; if a railroad, the character of the traffic, whether largely of a kind dependent upon uncertain conditions or so diversified that causes affecting part will not greatly affect the whole. The return should be a fair, just and reasonable one, and not so meager as to repel investment in the property or to embarrass the owner in operating it. In *Wilcox v. Consolidated Gas Co.*, 212 U. S. 19, the business was that of a gas company in New York City, where interest rates are generally the lowest. It dealt in one of the necessaries of urban life. The Supreme Court observed that the risk was reduced almost to a minimum, that the company had a monopoly of the gas service in the largest city in America, secure from competition, and said: 'Taking all facts into consideration, we concur with the court below on this question, and think complainant is entitled to six per cent on the fair value of its property devoted to the public use.' "

Assuming, as we think we properly may, that the rate of return fixed by this court in the Consolidated

Gas Company case is the standard for measurement of reasonableness of return on property devoted to public service under the conditions existing in that case, it is proper to contrast the situation there with the situation here.

Each of the systems of railroads involved in these suits was exposed to an *initial risk* much greater than that of a gas company or any other enterprise which can be called to mind. The lines were not projected into well settled and prosperous regions. No development had preceded the railroads, but they preceded all development. As heretofore pointed out, each line was undertaken in obedience to a strong popular call therefor. Before the "large waste" referred to by Judge Lochren in his decision was changed by the advent of railroads "into sites of prosperous cities, thriving towns and villages and farms" the Northern Pacific went into the custody of the Federal Court as a bankrupt twice, the parent company of the Great Northern once, and the Minneapolis & St. Louis Company once.

Other instances of bankruptcy of railroad companies with lines of railway in Minnesota are the Lake Superior & Mississippi Co., the Southern Minnesota Co., the Chicago, St. Paul & Kansas City Co., the Chicago Great Western Co., and the Sioux City and Northern Co. These experiences have not been unusual with railway enterprises. These failures resulted simply from the lack of business sufficient to sustain the properties. When the railroad lines were built the country was undeveloped. It could not be inhabited or substantially developed in advance of railway

transportation. The *initial risk* was inevitable and, as experience shows, so great that receiverships followed.

A gas company is never necessarily exposed to any such initial hazard. It does not establish a plant in advance of settlement but only after there is an existing demand for its product. It constructs to supply a demand, and not to create means of supporting a population to produce a demand. Its enterprise follows the growth of communities instead of preceding it as railroads do. The Consolidated Gas Company in New York has for many decades paid regularly a substantial and adequate return. Not so with these railroad companies. The Northern Pacific for 38 years and down to 1893 paid *in the aggregate* only 4.29% in money and issued certificates for 5.11%, which were taken care of in the re-organization of 1896. (See Exhibit 18 Gray, Vol. 10 N. P. case, and Vol. 2, p. 272.) The predecessor of the Great Northern was relieved from receivership in 1881 and the Minneapolis & St. Louis somewhat later.

It seems right that the initial risk attending the construction of the Minnesota railroads, always rendering uncertain and delaying a return upon the investment and sometimes resulting in the loss of the investment itself, is an important distinction in favor of a higher return than that decided by this court to be reasonable for the New York Gas Co. monopolizing the business of that great city, long having a substantial and regular return, and being certain of it for all time in the future.

The railroad business depends for its prosperity upon the success of the business of the merchant, the manufacturer, the lumberman, the miner and the

farmer. The railroad company shares all of the risks of all other kinds of business of financial panics or depressions, and enormous exposure to the elements, and, as pointed out by Mr. Hill in his testimony, is at all times exposed to competition of other carriers by rail or by water, or both.

It seems right to say that the risk of the business is a just factor in the determination of the rate of return which a public service corporation may reasonably have, and that a railroad company whose lines were constructed and exist under the conditions surrounding the companies in these cases, with the history of no return, or delayed, irregular and inadequate return, is clearly entitled to have a very much higher rate of return than six per cent fixed for the New York Consolidated Gas Co. or than seven per cent here objected to by the appellants.

Because of the character of the question under consideration and the special and peculiar means of knowledge had by the Master who heard the testimony and the Circuit Judge who confirmed his report and entered the decree appealed from, we feel justified in referring at some length to the report and to the decision.

Report of the Master.

The rate of return was considered by the Master in subdivision XV of his report. (See Vol. 1, page 251 N. P. Case.)

He decided that a full and fair return, such as is derived from investments in other kinds of business and subject to like conditions, would not compel the public served to pay an unjust or burdensome rate, and said:

> "The theory that it is entitled to *some return*, the amount thereof to be adjusted by the legislature regardless of property values devoted to the public service, must be rejected. Any rate which will not produce a full and fair return is unreasonable and is confiscatory to the extent that it comes short of producing such return, and is a taking of property from the carrier class and giving it to the persons served without compensation."

The report shows that the Master did not reach his decision—as we think he might well have done—upon the testimony given by the defendant Staples. He regarded the statements of Mr. Staples merely as the testimony of a witness. Referring to him he said:

> "One of the most fair-minded and intelligent witnesses before the Master, one who from his long official experience and efficient service had necessarily given the matter very careful consideration, was of the opinion that the carrier *should be assured an average annual return of seven per cent on a fair valuation of its property*. The Master concurs in this view."

He called attention to the nature of the business, its fluctuations from year to year due to extremes of weather and varying crop conditions, and to the fact that the operations of railroads can never be suspended, but that in time of adversity as well as of prosperity the *carrier must be ready to serve or forfeit its property devoted to the public use.*

He called attention to the fact that competition is ever present and increasing, and said:

> "It would seem that the return here suggested would be the minimum when compared with returns from other kinds of business not subject to such conditions."

He added:

> "It must be remembered also that the public demands and is able and willing to pay for a service of the highest efficiency, requiring able and skillful management. The continued prosperity of the country depends upon it, and the returns from such undertakings should be sufficiently adequate to encourage the investment of ample capital for their successful prosecution."

He called attention to the language of this court in *Willcox v. Consolidated Gas Co.*, above referred, and said:

> "If a gas company, under the conditions there disclosed, with an assured revenue beyond all reasonable probability of hazard, was entitled to six per cent net return on the value of its property devoted to public use, a finding that in these cases the companies are entitled to seven per cent net return on such valuation after

allowing for all necessary repairs and replacements is certainly conservative and does no injustice to the public."

He called attention to the fact that for 38 years the average results of the business of national banks showed net annual earnings to capital and surplus of 8.58%, and for a period from March 1, 1897, to June 30, 1907, of 9.84%, and said;

"Few businesses are so free from hazard as that of national banks."
(Vol. 1, pages 251, 252 N. P.)

Decision of the Circuit Court.

(Vol. 1, page 431 N. P. Record.)

In his decision, Judge Sanborn called attention to the things which "conditioned the measure of a fair return upon capital invested," and mentioned:

The character of the business in which the investment is made;

The locality in which it is placed;

The returns secured in that locality from other investments of similar nature;

The uniformity and certainty of the return;

The risks to which the principal and income from it are subjected.

He said:

"An investment in a bank, in a factory, in a mercantile, manufacturing, or agricultural business, is substantially free from regulation by the government and exempt from any duty to the public, except that of paying taxes. If

the business in which such an investment is made is unprofitable, its owners may promptly discontinue its operation until more prosperous days come and then return to their undertaking. An investment in a railroad which operates in many states is subject to the regulation of its business by many governments. Its owners owe the duty to the governments and to the public to operate their railroad continually in days when its operation is unprofitable as well as when it is remunerative, a duty they must discharge under the penalty of the forfeiture of their property if they fail.

In view of these facts, they ought to be permitted to receive a return large enough to enable them to accumulate in prosperous days a surplus sufficient to enable them to protect their property in days of disaster and to make their average return through days of prosperity and of adversity fair and just.

The lands in Minnesota through which these railroads extend are fertile and productive. The cities, villages, and towns they reach are rapidly increasing in population and wealth, and the people they serve are thriving and successful. The evidence satisfies that the railroads are maintained in excellent condition, that they are efficiently and on the whole economically managed and operated, and are rendering commendable service. Justice to the thriving people they serve does not require that the owners of these railroad properties should be deprived of a fair return upon their values.

To deprive them of such a return would prevent advances and tend to compel reductions in the wages and salaries of their employes, would tend to prevent the extension of their lines into portions of the state where the development and accommodation that railroad service assures would be welcome and

may be needed, to deteriorate the character of the service they render, and to retard the general prosperity.

The legal rate of interest on a debt in Minnesota, in the absence of contract, is six per cent, and by contract it may be ten per cent per annum. Rev. Laws Minn. 1905, 2733. Rational investments in agricultural, manufacturing, mercantile, and other industrial pursuits, and even well-secured loans, yield returns in Minnesota corresponding with these lawful rates. Investments in railroads and the returns thereon are at the risk of failures and partial failures of crops, of the disasters, delays, and expenses of unusual storms, snow, and cold, of the great financial disasters which occasionally prevent or delay the movement of traffic, and of the burden of continuous operation whether profitable or unremunerative.

It is an axiom in economics that the greater the risk the greater must the return be upon invested capital, and the conclusion is irresistible that a net return of seven per cent per annum upon the respective values of the properties of these companies in Minnesota devoted to transportation is not more than the fair return to which they are entitled under the Constitution of the United States."

Judge Lochren who heard the application for a temporary injunction, Judge Otis the special master who heard the case, and Judge Sanborn to whom the report of the Master was made and who heard exceptions thereto and entered the decree, each with more or less particularity, pointed out the burden of the duty to the public borne by these companies, the uncertainty and perils of the railroad business, the character of the service rendered and of the communities served, the willingness and ability of the public to pay

compensatory rates, the danger to the public which will result if these companies be, by the enforcement of insufficient rates, deprived of power properly to discharge existing duties and adequately to prepare for additional demands.

By the report and decision it is shown that a rate of seven per cent upon the fair value of the property used for the public is minimum and much less than that enjoyed by the owners of capital engaged in other and very much less hazardous enterprises than the railroad business.

There are perhaps no three men in Minnesota better qualified by learning, experience, familiarity with the history of the railroads in Minnesota and with other business conditions of which courts may properly take notice, to form a just opinion on this subject.

While it is plain beyond doubt that these companies do not now earn as much as seven per cent upon their property in Minnesota devoted to the public service therein or upon any class of it covered by the rates here complained of, and that therefore it was not absolutely essential to the decision of the case in the court below to specify precisely what rate of return would be just and reasonable under all the circumstances, yet it seems clear from the language of the report and of the decision upon this point, that the Master and the Circuit Judge were both of opinion that a rate of seven per cent is a very low minimum.

We respectfully submit that the facts disclosed in this record, together with the statements made and reasons given by the Master and Circuit Judge, satisfactorily establish that a rate of return, to be reason-

ably adequate, must be substantially higher than seven per cent upon the value of the property used to render the service covered by the rates.

VII.

The Rates Complained of Are Confiscatory.

In the Northern Pacific case the findings of the Master, confirmed by the Circuit Court, were to the effect that the actual earnings from all its intrastate business in Minnesota for the fiscal year ended June 30, 1908, when the fares and rates complained of, except the commodity rates prescribed by Chapter 232, were in actual operation, were sufficient, after deducting taxes and operating expenses, to pay upon the value of the property used in and chargeable to the conduct of its intrastate business in Minnesota, an annual return of only 2.90%. Such rate of annual return from the intrastate freight business was 1.941%, and from its intrastate passenger business was 4.2%.

In the Great Northern case it was found that such rate of return from all its intrastate business in Minnesota was sufficient to yield an income of only 3.359% on the value of its property used in and chargeable to such business. The return from the intrastate freight business was 5.468%, and from the intrastate passenger business was 0.925%.

If the commodity rates prescribed by Chapter 232 had been in effect during that year, the net earnings from the intrastate freight business would have been decreased, and as found by the Master (page 271, Vol. 1 N. P. Case) would have been sufficient to yield *to the Great Northern Company* only 4.937%.

In the Minneapolis & St. Louis case such intrastate earnings would have been sufficient to pay an annual

return of only 2.93% on the value of the property used in and chargeable to the conduct of the intrastate business. The net earnings from its intrastate freight business would have been sufficient to pay a return of only 2.47%, and from its intrastate passenger business of 1.79%.

(See opinion of the Circuit Court pages 414 and 415, Vol. 1 N. P. Case, table attached to page 264, table attached to page 270, and also pages 273 et seq. Vol. 1 N. P. Case.)

The Master (page 280 Vol. 1 N. P. Case) found:

> "It appears from the foregoing facts in these three cases and the Master finds that for the two years next prior to July 1, 1908, in these three cases the revenue derived by the said defendant railway companies and each of them from the property thereof devoted to the public use in the operation of their respective lines of railway and the conduct of their business as common carriers of passengers and freight, within and local to the State of Minnesota, were and that they still are inadequate and insufficient compensation for the property so used and the services rendered, and that the aforesaid rates prescribed by the Orders of the Railroad and Warehouse Commission and the Acts of the legislature were and still are unreasonably low, unjust and confiscatory, and, in the immediate future and until there shall be very material changes in existing conditions not likely soon to occur, they will continue so to be, and that the enforcement of said orders and acts should be enjoined and restrained as well because they are unreasonably low, and confiscatory, as because they constitute a burden upon and an interference with and a regulation of interstate commerce, as has been hereinbefore found and determined."

Business of 1907, 1908 and 1909 Compared.

Northern Pacific Case.

For the purpose of ready comparison we state below the passenger and freight revenue separately and together, by years for 1907, 1908 and 1909, for the entire line, the Minnesota interstate business and the Minnesota intrastate business, and the Minnesota total.

NORTHERN PACIFIC RAILWAY COMPANY.

Passenger Revenue.

Year Ending June 30	Entire Line	Minn. Interstate	Minn. Intrastate	Minn. Total
1907	(1)$16,330,874.62	(4)$1,788,299.00	(7)$1,080,088.83	$2,868,387.83
1908	(2) 18,133,238.52	(5) 1,940,718.17	(8) 1,015,150.34	2,955,868.51
1909	(3) 17,330,608.06	(6) 1,877,930.75	(9) 1,059,078.29	2,937,009.04
Increase or *Decrease* in 1909 over 1908	*802,630.46* *4.43%*	*62,787.42* *3.24%*	43,927.95 4.33%	*18,859.47* *0.64%*

Freight Revenue.

1907	(10)$47,668,243.59	(13)$8,859,329.93	(16)$1,672,368.44	$10,531,698.37
1908	(11) 46,423,836.33	(14) 7,953,734.41	(17) 1,555,342.92	9,509,077.33
1909	(12) 47,073,305.13	(15) 8,227,849.97	(18) 1,533,994.03	9,761,844.00
Increase or *Decrease* in 1909 over 1908	649,468.80 1.40%	274,115.56 3.45%	*21,348.89* *1.37%*	252,766.67 2.66%

Passenger and Freight Revenue.

1907	$63,999,118.21	$10,647,628.93	$2,752,457.27	$13,400,086.20
1908	64,557,074.85	9,894,452.58	2,570,493.26	12,464,945.84
1909	64,403,913.19	10,105,780.72	2,593,072.32	12,698,853.04
Increase or *Decrease* in 1909 over 1908	*153,161.66* *0.24%*	211,328.14 2.14%	22,579.06 0.88%	233,907.20 1.88%

(1) Page 198 of annual report of commission for 1907, also annual report of Company, Vol. 1 N. P. Case.

(2) Ex. 80 Elliott, Vol. 10 N. P. Case.

(3) Page 261 Annual Report of Commission 1908, also annual report of Company, Vol. 1 N. P. Case.

(4) Derived from Ex. 3-L and 3-M Hillman, Vol. 9 N. P.

(5) Ex. 80 Elliott, Vol. 10 N. P.

(6) Page 315 annual report of Commission 1909, also annual report of Company, Vol. 1 N. P. Case.

(7) Derived from Ex. 3-L and 3-M Hillman, Vol. 9 N. P.

(8) Ex. 80 Elliott, Vol. 10 N. P.

(9) Page 209 annual report of Commission, also annual report of Company, Vol. 1 N. P. Case.

(10) Page 203 annual report of Commission 1907, also annual report of Company 1907, Vol. 1 N. P.

(11) Ex. 80 Elliott, Vol. 10 N. P. Case

(12) Page 262 Annual Report of Commission 1909, also annual report of Company 1909, Vol. 1 N. P.

(13) Derived from 3-L and 3-M Hillman, Vol. 9 N. P.

(14) Ex. 80 Elliott.

(15) Page 205 Annual Report of Commission, also annual report of Company 1909, Vol. 1 N. P.

(16) Derived from Ex. 3-L and 3-M Hillman, Vol 9 N. P.

(17) Ex. 80 Elliott, Vol. 10 N. P.

(18) Page 205 annual report of Commission, also annual report of Company 1909, Vol. 1 N. P.

Great Northern Case.

A similar statement in the Great Northern Case is as follows:

PAGE BOUND VERTICAL IN BOOK

GREAT NORTHERN CASE.

Great Northern Railway Company—Passenger Revenue.

Year ended June 30	Entire Line	Minn. Interstate	Minn. Intrastate	Minn. Total
1907	(1)$10,190,458.76	(4) $1,737,013.81	(7) $2,136,303.07	$3,873,316.88
1908	(2) 11,192,461.25	(5) 1,890,105.43	(8) 1,750,522.02	3,640,627.45
1909	(3) 10,922,935.07	(6) 1,834,316.65	(9) 1,797,321.62	3,631,638.27
Increase or *Decrease*	*$269,526.18*	*$55,788.78*	$46,799.60	*$8,989.18*
In 1909 over 1908	2.41%	2.95%	2.67%	0.25%

Freight Revenue.

1907	(10)$38,766,454.22	(13) $13,598,924.68	(16) $3,729,583.20	$17,328,507.88
1908	(11) 40,319,341.45	(14) 13,292,302.05	(17) 2,366,359.02	15,658,661.07
1909	(12) 39,159,439.76	(15) 13,231,315.24	(18) 2,338,260.17	15,569,575.41
Increase or *Decrease*	*$1,159,901.69*	*$60,986.81*	*$28,098.85*	*$89,085.66*
In 1909 over 1908	2.88%	0.46%	1.19%	0.57%

Passenger and Freight Revenue.

1907	$48,956,912.98	$15,335,938.49	$5,865,886.27	$21,201,824.76
1908	51,511,802.70	15,182,407.48	4,116,881.04	19,299,288.52
1909	50,082,374.83	15,065,631.89	4,135,581.79	19,201,213.68
Increase or *Decrease*	*$1,429,427.87*	*$116,775.59*	$18,700.75	*$98,074.84*
In 1909 over 1908	2.77%	0.77%	0.45%	0.51%

Decrease in Italics.
Increase in Roman.

(1.) Page 199 of Annual Report of Commission for 1907, also annual report of Company, Vol. 1 G. N. Case.

G. N. Ry. Co.	$ 9,844,257.63
W. & S. F. Ry. Co.	346,201.13
	$10,190,458.76

(2.) Ex. 53 Ward, Vol. 6 G. N. Case.

(3.) Page 261 Annual Report of Commission 1909, also annual report of Company, Vol. 1 G. N. Case.

(4.) Annual Report of Company for 1907, Vol. 1 G. N. Case.

	Interstate
G. N. Ry. Co.	$ 1,652,875.93
W. & S. F. Ry. Co.	84,137.88
	$ 1,737,013.81

(5.) Ex. 53 Ward, Vol. 6 G. N. Case.

(6.) Page 205 Annual Report of Commission for 1909, also annual report of Company, Vol. 1 G. N. Case.

(7.) Annual Report of Company for 1907, Vol. 1 G. N. Case.

	Interstate
G. N. Ry. Co.	$ 2,055,900.69
W. & S. F. Ry. Co.	80,402.38
	$ 2,136,303.07

(8.) Ex. 53 Ward, Vol. 6 G. N. Case.

(9.) Page 209 Annual Report of Commission for 1909, also annual report of Company, Vol. 1 G. N. Case.

(10.) Page 203 of Annual Report of Commission 1907, also annual report of Company, Vol. 1 G. N. Case.

G. N. Ry. Co.....	$37,175,720.92
W. & S. F. Ry. Co.....	1,590,733.70
	$38,766,454.62

(11.) Ex. 53 Ward, Vol. 6 G. N. Case.

(12.) Page 262 Annual Report of R. R. Commission 1909, also annual report of Company Vol. 1 G. N. Case.

(13.) Annual Report of Company for 1907, Vol. 1 G. N. Case.

G. N. Ry. Co.....	$12,909,735.18
W. & S. F. Ry. Co.....	689,189.50
	$13,598,924.68

(14.) Ex. 53 Ward, Vol. 6 G. N. Case.
Ex. 64 Parker, Vol. 6 G. N. Case.

(15.) Annual report of Company for 1909, Vol. 1 G. N. Case, also Ex. 64 Parker, Vol. 6 G. N. Case.

(16.) Annual report of Company for 1907, Vol. 1 G. N. Case.

G. N. Ry. Co.....	$ 3,524,373.12
W. & S. F. Ry. Co.....	205,210.08
	$ 3,729,583.20

(17.) Ex. 53 Ward, Vol. 6 G. N. Case.
Ex. 64 Parker, Vol. 6 G. N. Case.

(18.) Annual report of Company for 1909, Vol. 1 G. N. Case.
Ex. 64 Parker, Vol. 6 G. N. Case.

Minneapolis & St. Louis Case.

In the Minneapolis & St. Louis case it cannot be seriously contended that the rates complained of are sufficient to yield any reasonable return on the proportionate value of the property used in the conduct of the business covered by the rates. Its net income from all sources is scarcely sufficient to pay interest on its outstanding bonds. The value of the property is greatly in excess of the par value of the bonds. Its net income from the business covered by the rates complained of is not sufficient to pay a fair proportionate part of such interest. It seems to us that this company must earn more money or go into the hands of a receiver, within a comparatively short time.

We deem it unnecessary to say more as to that case. It clearly appears in the Northern Pacific and in the Great Northern case that there has been no sufficient increase in the business covered by the rates complained of (or indeed in the total business of either company within Minnesota) to justify any of the rates complained of, or to furnish any ground for belief that any of them will be adequate at any time in the near future.

Some Findings Objected To by Complainants.

The property values as found by the Master and the proportions thereof assigned by him to the different classes of intrastate business respectively are too low.

The evidence is sufficient not only to justify, but to compel a finding of higher values.

The *present value* in each case as found by the Master was not in excess of the sum that he found it

would now cost to reproduce the physical property.

In the Northern Pacific and Great Northern cases it is conclusively established that these properties, by reason of location, connections, traffic, grades, physical conditions, and ability to produce transportation at a cost low in comparison with other good railroads, are well worth more than the mere cost of reproduction, of the physical or tangible property. Such properties, if they serve growing communities, are always considered to be worth more than the reproduction new cost.

The cost of reproducing the physical property of these companies as found by the Master is too low.

Complainants filed exceptions to the Master's determinations of the reproduction value of certain important items.

(See exceptions III to XV, pp. 289-294, for N. P. and III to XII for Great Northern, pp. 303-309, Vol. 1 N. P. Record.)

We call the Court's attention to some determinations of value which are so low when viewed in the light of the evidence hereinbefore cited, that they may justly be said to be clearly and manifestly against the great weight of the evidence, if not indeed, arbitrary.

For example:

Lands.

In the Northern Pacific case the Master found the value of terminal and right of way lands to be $21,024,562.00—being more than $4,275,000. less than the amount claimed by complainants.

In the Great Northern case he found the value of terminal and right of way lands to be $25,172,650.80,

being more than $5,436,000. less than the amount claimed by complainants.

The land values claimed by complainants were established not only by the testimony of experts, whose qualifications and high character were admitted by the defendants, but also by the experience of these and other companies in making a very large number of recent purchases of similar railroad lands at prices which fully sustain the opinions of the expert witnesses. There is no opposing evidence, except alone the tabulations of Mr. Morgan, hereinbefore fully explained and shown to be entitled to but little weight, as evidence of the value of railroad lands.

It is conceded by everyone having any knowledge of the subject that railway terminal lands or right of way lands cannot be condemned or purchased by a railway company for the mere naked value of the land taken. The rule in such cases is that the owner is entitled (a) to the full value of the land actually taken, and (b) to damages resulting by reason of the taking to the remaining portions of his land. It is also well known that the expense of acquiring railroad right of way whether by condemnation or purchase, is very substantial. The amount of consequential damages and of the cost of acquisition depends upon many circumstances and conditions, varying with almost every owner to be dealt with. If the whole of a lot or other tract is needed and be condemned or bought for its value, there will be no consequential or severance damages. Such cases, however, are rare. Usually a part only of the land of the owner is needed, and not infrequently the resulting damages to the land not taken exceeds the value of the land that is taken. There is

always a cost of acquisition, whether the land be condemned or purchased.

For the cost of acquisition of the terminal lands in St. Paul and Minneapolis and for consequential damages, the Master *allowed only 5 per cent* of the value of the terminal lands. There is *no support* in the evidence for so small an allowance. All experience shows that a much greater allowance should have been made, and the evidence in the record is sufficient to compel a finding that such cost of acquisition and consequential damages is more than 25 per cent of the value of such terminal lands.

In fixing the valuation of right of way lands *outside of the terminals in St. Paul, Minneapolis and Duluth,* the Master reduced the values claimed by the complainants 25 per cent, amounting in the Northern Pacific case to more than $1,236,000 and in the Great Northern case to more than $1,775,000. The cost of similar lands acquired by these companies, within a reasonably short time prior to these suits, fully justifies the claims of the complainants. Mr. Morgan's tabulations, were in many cases mere arbitrary percentages of the amounts claimed by the complainants and it is respectfully submitted that it has been hereinbefore shown that his scheme for the valuation of railroad land is entitled to little weight. The Master had no justification for cutting 25 per cent off the right of way values as established by the evidence and as claimed by the complainants.

(See p. 193 et seq. of this brief; p. 211 et seq., Vol. 2 N. P.; p. 1059-1066 Vol. 3 N. P.; p. 177 et seq. Vol. 2 G. N.)

In complainant's exceptions to the Master's Report III, IV and V, pp. 289-290, Vol. 1 N. P., the testimony and exhibits bearing upon the land values of the Northern Pacific Railway Company in Minnesota are cited; and in complainant's exceptions to the Master's Report III, IV, V and VI, p. 302, et seq. Vol 1 N. P., the testimony and exhibits bearing upon the value of the lands of the Great Northern Railway Company in Minnesota are cited.

From these it appears that the Master, without any justification or support in the evidence, found the value of such lands about $5,000,000.00 too low in each case.

Unit Prices of Important Construction Items.

Hereinbefore at sub-division I of this brief, p. ——, et seq., we have taken up in detail the evidence as to the unit prices of the construction items, namely:

2. Grading, etc.
5. Cross ties, switch ties, etc.
6. Ballast.
7. Rails.
10. Track laying and surfacing.
11. Bridges, etc.

and it clearly appears that the Master adopted low prices as to each item. We believe, in every instance, where the unit price claimed by the complainants in any case was lower than corresponding prices in the other cases, the lowest price claimed in any case was taken. For example, in the Great Northern case, complainants claimed a higher price for ties, etc., than was claimed for that item in the Northern Pacific case, but the Master adopted the lower figure, and in

the Northern Pacific case a higher unit price for ballast was claimed than in the Great Northern case, and again the Master adopted the lower figure; and for track laying, etc., the unit cost claimed by the Great Northern was higher than that claimed by the Northern Pacific, and again the Master adopted the lower figure. For bridges, trestles, etc., the unit prices adopted by the Master were lower than those claimed by complainants in any case, notwithstanding the prices claimed were supported by proof as to what has been and what was paid for current items.

Interest During Construction.

The Master's allowance of interest during construction at the rate of 4 per cent per annum was excepted to by complainants. (See exception XI in Northern Pacific case, p. 294, Vol. 1 N. P., and exception XIII in Great Northern case, p. 308, Vol. 1 N. P.)

The right to interest during construction is clearly shown in subdivision I of this brief. The Circuit Court, concerning this point said:

> "The weight of testimony on this subject, however, sustains larger amounts than those fixed by Mr. Morgan or the Master, and there was no error against the defendants in the latter's finding an allowance of the item here under consideration in either of the cases in hand."

To ascertain the amount of interest during construction which must be paid, there was first found the period of time necessary to build the roads in Minnesota. Interest at the rate of 4 per cent per annum for one-half that period was allowed by the Master. The

method employed is unobjectionable, but the rate of interest allowed is too low. The Master and the Circuit Court found that the owners of these properties were entitled to a return at the rate of *seven* per cent upon the value of the property used in the public service, and no reason is apparent why a less rate should be allowed upon the money required to build these roads during the time of construction. It will not, we think, be claimed by anyone that money necessary for the reproduction of these properties could be procured at *four* per cent, and it seems certain that if it could be procured at all it would require at least *six* per cent. As hereinbefore pointed out, all of the testimony in the case (including that of Messrs. Hill, Elliott, Stevens and Berry) was to the effect that interest at the rate of at least *six* per cent must necessarily be paid. The Master reduced the rate to *four* per cent, in the face of convincing testimony given by these witnesses, each of whom was undoubtedly as well qualified to speak on the subject as anyone could be. By this reduction alone, the value of the Great Northern property in Minnesota was reduced more than nine millions of dollars (see p. 308, Vol. 1 N. P.); and in the Northern Pacific case there was, of course, a corresponding reduction.

Minnesota net earnings from all sources as found by the Master in the Great Northern Case exceeded the amount claimed by defendants, and in the other cases there was no difference between the parties on that point.

In the Great Northern case the Master charged the Company with $8,180,025.11 as its Minnesota net earnings from all sources (See table of results, Vol. I, N. P. case, page 270). The defendants' expert Hillman, by his table 13 of Exhibit G, Vol. 5, G. N. case, claimed that the total of such net earnings, freight and passenger, intrastate and interstate, including all miscellaneous earnings, etc., chargeable to the Company in Minnesota, was $7,991,505.00, *being $188,520.11 less than the amount found by the Master.*

This is another illustration of the extreme strictness against the Company of the Master's findings in these cases.

There was no difference between the parties as to the total net earnings from all sources in Minnesota, in the Northern Pacific case, or in the Minneapolis & St. Louis case.

Apportionment of value to the different classes of business as made by the Master was favorable to the defendants.

We have heretofore pointed out in this brief that when these cases were argued at length before the Master it was by counsel conceded that there might properly be apportioned to the Minnesota intrastate business 24% of the total value of the Northern Pa-

cific road in Minnesota. The Master adopted the revenue basis and charged only 21% of such total value to the intrastate business in that case.

It was further claimed by the defendants' counsel in their argument before the Master, as hereinbefore shown in detail, that the apportionment of property value to the intrastate business might properly be made on the revenue basis or the operating expenses basis, and defendants asked that the basis which the Master found to be most favorable to the defendants be adopted. The Master calculated such apportionment on both these bases and adopted the revenue basis, which was the more favorable to the defendants, notwithstanding the defendant Staples in his testimony favored the operating expenses basis.

The extra cost of doing the intrastate business as found by the Master was low in all these cases.

In the Great Northern Case the evidence clearly required a finding that the cost per ton per mile of doing the state freight business was at least three times as much as is such cost of doing the interstate freight business.

At page 258, Vol. I, N. P. Case, the Master found as follows:

> *"The Master finds from the weight of testimony that the cost per ton per mile of doing said freight business is at least two and a half times as much as is such cost of doing the interstate freight business in Minnesota, and that the testimony would amply sustain, if it does not compel, a finding that such relation of cost is as three to one"* * * * *

It is the relation of cost that is here expressed. The lower the interstate ton mile cost, or the higher the intrastate ton mile cost, the greater the ratio. The testimony hereinbefore in Subdivision III of this brief called to attention, clearly indicates that the relation of such intrastate ton mile cost to the corresponding interstate ton mile cost is *at least as three to one*. The character of the traffic of the Great Northern Company clearly distinguishes that case from the Northern Pacific case, and indicates without doubt that the ratio of two and one-half to one, which was employed by the Master in his calculations to arrive at the rate of return, is too low.

By Exhibit 53 Ward, it is shown that the Minnesota interstate traffic in iron ore on the Great Northern road produces 575,234,319 ton miles out of a total 2,123,744,733 ton miles, or more than one-fourth of all freight traffic in the state. The revenue per ton per mile yielded by the ore is only 0.406 cents per ton per mile, while the revenue per ton per mile in the intrastate business is 1.381 cents, and on all interstate business touching Minnesota is 0.681 cents, and on all business in Minnesota is 0.737 cents. The average length of haul of Minnesota intrastate business is 113.3 miles, and of total interstate business touching Minnesota 411.8 miles, and of the total interstate business excepting iron ore 557.6 miles, and if all of the business on the iron division be excluded, the average haul of interstate business touching Minnesota is 621 miles.

It is axiomatic that, other things being equal, the longer the haul the lower the cost per ton per mile. The relation of revenue per ton per mile from the Min-

nesota intrastate business to that from the interstate business in Minnesota was as 2.03 is to 1, but excluding the Mesabi division, on which the iron ore is the principal traffic, such relation would be as 1.72 to 1, and in the Mesabi division such relation is as 3.71 to 1.

This large volume of low class, low revenue, and low cost interstate traffic indicates clearly that the ratio of 2½ to 1 as employed by the Master is too low.

The findings of the Master upon this point were excepted to by the complainants. See table attached to page 314 Vol. I, N. P. Case, which shows what the results would have been had the Master employed the ratio of 3 to 1 in making his calculations of the rate of return in the Great Northern case. That table shows that such rate of return on the intrastate freight business, *without deducting the losses which would have resulted if the commodity act had been in force*, would have been only 4.056% as against 5.468% as found by the Master by use of the ratio of 2½ to 1. If the ratio of 3 to 1 had been used the rate of return on all intrastate business would have been only 2.356% as against 3.359% as found by the Master by use of the ratio of 2½ to 1.

The testimony referred to in Subdivision III of this brief clearly shows that the Master was not justified in using the ratio of 2½ to 1 in the Great Northern case. *Certainly in this case the testimony was abundantly sufficient to "compel a finding that such relation of cost is as 3 to 1."*

CONCLUSION.

In concluding the discussion of these cases there are certain fundamental considerations to which attention may be properly drawn.

In the complex elements that are necessarily involved in proving the value of a large railroad system and the results of operation, under particular rates, especially the expenses of classes of business that do not naturally divide themselves, mathematical exactness cannot in every instance be reached; nor is it in any way necessary for the determination of the rights of the parties—at least in either of the cases now under consideration.

In *C. M. & St. P. v. Tomkins*, 176 U. S. 167, 178, this court said:

> "If the court meant by that to say that there was no testimony tending to show what was the cost of doing local business, we are constrained to say that the statement is erroneous, because there was abundance of testimony bearing upon that question. If it meant simply that it could not determine that fact with mathematical accuracy, basing it upon testimony of the exact amount of money paid out for doing such work, it is undoubtedly true, but there are many things that have to be determined by court and jury in respect to which mathematical accuracy is not possible. Take the ordinary case of condemnation of real estate, the value is to be determined by the trial tribunal, whether jury or court, and yet no one is able to state the exact value. In this very case the court fixed the value of the company's property in South Dakota at $10,000,000, and yet it is impossible from the testimony to say that this conclusion was absolutely accurate, that there was testimony tending to show to a dollar such value.

> Beyond the figures given from the books of the company of the actual cost of doing the total business of the company there was the testimony of several experts as to the relative cost of doing local and through business. Such testimony is not to be disregarded simply because it cannot demonstrate by figures the exact amount or per cent of the extra cost. It is obvious on a little reflection that the cost of moving local freight is greater than that of moving through freight, and equally obvious that it is almost if not quite impossible to determine the difference with mathematical accuracy. * * * It is impossible to distribute between the two the relative cost of carriage. Yet that there is a difference is manifest, and upon such difference the opinions of experts familiar with railroad business is competent testimony, and cannot be disregarded."

The assertion of this condition does not, therefore, mean that evidence may not be produced adequate for judicial action, nor that it has not been amply produced in these cases. The elements referred to in *Smyth v. Ames* (supra) as necessary for consideration in determining value of railroad property, indicate that value is finally a matter of judgment upon all of the evidence produced. Within the limits of fair judgment, it may be frankly stated that value of railroad properties, such as these have been shown to be, cannot be mathematically, nor perhaps conclusively shown to be one specific sum as against another somewhat higher or lower. So long as the judgment is exercised within the limits of the persuasive proof, it cannot be said that one of such sums is correct and another incorrect. In these cases we do assert however, that cost of reproduction new, depreciation being fully considered and taken into account, is the minimum of

value and that when that cost has been determined upon the evidence, right-minded judgment must agree to it as the minimum. Value above this minimum may be variously contended for as reasonable minds may weigh the considerations affecting it, but, granted that the property is well located and efficiently managed with prospects of increasing business, the cost of reproduction—or of presently constructing another, the equivalent of it—must within all rules be agreed upon as the minimum of value. It may be said however, that cost of reproduction may be shown either by ascertaining that cost for the property within Minnesota, or for the whole operating system, assigning a track mileage proportion to the state. Both methods have been followed here. Again, it may be said that market prices of outstanding capital should be regarded. Results from this method are fully shown in these records, with mileage proportions assigned to the state.

It has been at times contended in these cases and also asserted elsewhere, that values in a defined territory, like a State, should be assigned upon the proportion of gross revenue earned in the State to the whole gross revenue, or by the proportion of operating expenses expended in the State to the entire operating expenses. Apportionments upon these bases may be made from the evidence here and in each instance (save two) much higher values are located in Minnesota than those adopted by the Master. In the two instances referred to, slightly lower values for the Northern Pacific are shown.

Again, after total value in the State has been determined, it becomes necessary to apportion that value

between kinds of traffic, state and interstate, and between the freight and passenger business of each. Because of the common use of property for each kind and class, it is obvious that the whole property cannot be divided physically but must be apportioned upon some other basis and as we have shown, the gross revenue basis is fair and just and is the one that has met with uniform approval of the courts. Appellants at times have contended for an apportionment upon the basis of operating expenses and the Master (1 N. P. p. 265: 271.) stated the results in the Northern Pacific and Great Northern cases also upon that basis, although adopting the revenue basis as the one more correct.

We believe that it has been established beyond room for controversy that cost of reproduction of the property within the State is the minimum of value that can be contended for in these cases and that the apportionment of value between classes and kinds of business upon the gross revenue basis may be used without injustice to appellants to establish the values of property devoted to the public use under the intra-state freight and passenger rates complained of, but it may be plainly seen from the record (1) that in adopting these bases, the Master in nearly every instance found values lower and percentages of return higher than result from any other method, and (2) that, if other suggested methods be adopted, values in the State would appear to be greater and the net return under the reduced rates materially lower. In the Northern Pacific case, an apportionment of value to the State, of a gross revenue or an operating expense proportion of the total system cost of reproduction indicates slightly

lower value in the state than that found by the Master and a slightly higher percentage of return upon value under the rates in issue, but the difference is so slight as to be unimportant in considering the adequacy of the return.

We show herewith tables in each of the two cases in which these results are completely worked out from figures contained in the record.

From these tables, it is plain, therefore, that indulging every reasonable argument for different methods of ascertaining values, the rates are confiscatory. These tables indicate the results on every reasonable basis for arriving at the Minnesota property value and its apportionment to the different classes of business. The Master's results are more favorable to defendants than those produced by any other basis. Therefore, it must be said that defendants have no ground for complaint.

The valuation of these properties in the State was the result of principles and methods prescribed under authority of law, by the Appellant Commissioners. These principles and methods as formulated by the engineer of the Commission, bear their official approval and follow, as well, in every essential aspect, the plan followed by other States in carrying out similar work. Differences of judgment arose over particular items and these were tried out as questions of law and fact before the Master and experienced men were called to testify and their testimony was weighed and examined in the light of current experience and actual transactions and records made in the ordinary course of business, and wholly without reference to this litigation. The results however, were determined within the principles laid down and approved by the state officials as

Table Showing Division of Reproduction Cost Whole Road, and Average Market Value of S

Sub-Division to the Fo

				Gross Revenu			
				INTRA Freight 12.05%	INTER Freight 61.61%	INTRA Passenger 9.05%	
Value of road in Minnesota as per Master's Findings.....			$90,204,545.00	$10,867,837	$55,577,733	$8,159,782	$
Income applicable to property included in valuation.....			5,431,514.56	210,905.11	4,020,704.98	342,663.75	
		Annual return	6.021%	1.941%	7.234%	4.2%	
Cost of reproduction whole road as per Master's Findings (P. 98).....			$452,666,489.00				
Basis	Exhibit 80—Elliott		Minnesota Porportion				
1—Gross Revenue.....	$13,336,047 / 68,235,484	= 19.54% Annual return	$88,451,032 6.141%	10,658,349 1.98%	54,494,681 7.38%	8,004,818 4.28%	
2—Operating Expenses.....	7,655,350 / 39,865,033	= 19.20% Annual return	86,911,966 6.249%	10,472,892 2.02%	53,546,462 7.51%	7,865,533 4.36%	
3—Track Mileage.....	1,810.76 / 8,427.97	= 21.49% Annual return	97,278,028 5.583%	11,722,002 1.80%	59,932,993 6.71%	8,803,662 3.89%	
Market value of stocks and bonds (Exhibit—Gray 17)....			$509,824,723.00				
Basis			Minnesota Proportion				
1—Gross Revenue.....		19.54% Annual return	$99,619,751 5.453%	12,004,180 1.76%	61,375,729 6.55%	9,015,587 3.80%	
2—Operating Expenses.....		19.20% Annual return	97,887,347 5.549%	11,795,425 1.79%	60,308,395 6.67%	8,858,805 3.87%	
3—Track Mileage.....		21.49% Annual return	109,561,333 4.956%	13,202,141 1.60%	67,500,737 5.96%	9,915,301 3.46%	

The first group of figures in this column are those used

Note.—If the Commodity Rates complained of had been in reducing the rates of return thereon correspondingly. (P. 264, V

RN PACIFIC RAILWAY COMPANY.

t Value of Stocks and Bonds, and Annual Return Thereon on Various Basis Compared With Master's Findings on Gross Revenue Basis.

n to the Four Classes of Business in Minnesota and Annual Return.

ss Revenue Basis				Operating Expense Basis					
	INTER	INTRA	INTER	INTRA	INTER	INTRA	INTER	INTRA	INTER
er)	Passenger 17.29%	Total 21.10%	Total 78.90%	Freight 17.70%	Freight 52.10%	Passenger 11.28%	Passenger 18.92%	Total 28.98%	Total 71.02%
2	$15,599,193	$19,027,619	$71,176,926	$15,966,204 (The same figures apply as shown in the first 4 columns, which are taken from Table, Page 128, Master's Findings)	$46,996,568	$10,175,073	$17,066,700	$26,141,277	$64,063,268
3.75	857,240.72	553,568.86	4,877,945.70						
.2%	5.495%	2.91%	6.85%	1.321%	8.556%	3.368%	5.023%	2.12%	7.61%
8	15,293,184	18,663,167	69,787,865	15,655,833	46,082,988	9,977,276	16,734,935	25,633,109	62,817,923
28%	5.61%	2.97%	6.99%	1.35%	8.73%	3.43%	5.12%	2.16%	7.77%
3	15,027,079	18,338,425	68,573,541	15,383,418	45,281,134	9,803,670	16,443,744	25,187,088	61,724,878
36%	5.70%	3.02%	7.11%	1.37%	8.88%	3.50%	5.21%	2.20%	7.90%
2	16,819,371	20,525,664	76,752,364	17,218,210	50,681.853	10,972,962	18,405,003	28,191,172	69,086,856
9%	5.10%	2.70%	6.36%	1.23%	7.93%	3.12%	4.66%	1.96%	7.06%
7	17,224,255	21,019,767	78,599,984	17,632,696	51,901,890	11,237,108	18,848,057	28,869,804	70,749,947
0%	4.98%	2.63%	6.21%	1.20%	7.75%	3.05%	4.55%	1.92%	6.89%
5	16,924,722	20,654,230	77,233,117	17,326,060	50,999,308	11,041,693	18,041,693	28,367,753	69,519,594
7%	5.07%	2.68%	6.32%	1.22%	7.88%	3.10%	4.63%	1.95%	7.02%
1	18,943,154	23,117,442	86,443,891	19,392,356	37,081,455	12,358,518	20,729,004	31,750,874	77,810,459
6%	4.53%	2.39%	5.64%	1.09%	7.04%	2.77%	4.14%	1.74%	6.27%

se used by the Master in his Findings.

l been in effect, the Intra-State net freight revenue would have been reduced by at least $21,493.67,
P. 264, Vol. 1, N. P.)

MINNESOTA RATE CASE

Table showing Division of Reproduction Cost Whole Road, and Average Market Value of Stocks and Bonds, and Annual R
Master's Findings on Gross Revenue Basis.

Sub-Division to the Four Classes of Business in Minnesota and Annual Retu

		Gross Revenue Basis.						
		INTRA Freight 11.88%	INTER Freight 66.72%	INTRA Passenger 10.29%	INTER Passenger 11.11%	INTRA Total 22.17%	INTER Total 77.83%	INTRA Freigh 12.4%
Value of road in Minnesota as per Master's Findings	$138,425,291.00	$16,442,200.00	$92,360,079.00	$14,243,633.00	$15,379,379.00	$30,685,833.00	$107,739,458.00	$17,164,7
Income applicable to property included in valuation	8,180,025.11	898,997.81	6,600,233.70	131,804.37	548,989.23	1,030,802.18	7,149,222.93	898,9
Annual return	5.909%	5.468%	7.146%	0.925%	3.570%	3.36%	6.64%	5.2
Cost of reproduction whole road as per Master's Findings (P. 99)	**$457,121,469.00**							
BASIS EX. 53—WARD	MINNESOTA PROPORTION							
1—Gross Revenue, *$20,275,907.75*—37.25%	$170,277,747.00	$20,228,996.00	$113,609,313.00	$17,521,580.00	$18,917,858.00	$37,750,576.00	$132,527,171.00	$21,114,4
$54,429,632.71 Annual return	4.804%	4.444%	5.810%	0.752%	2.902%	2.73%	5.39%	4.2
2—Operating Expenses, *$11,811,414.35*—32.67%	$149,341,583.00	$17,741,780.00	$99,640,704.00	$15,367,249.00	$16,591,850.00	$33,109,029.00	$116,232,554.00	$18,518,3
$36,158,055.63 Annual return	5.477%	5.067%	6.624%	0.858%	3.309%	3.11%	6.15%	4.8
3—Track Mileage, *$2,779.30*—32.52%	$148,655,901.00	$17,660,321.00	$99,183,217.00	$15,296,692.00	$16,515,671.00	$32,957,013.00	$115,698,888.00	$18,433,3
$8,547.33 Annual return	5.503%	5.090%	6.655%	0.862%	3.324%	3.13%	6.18%	4.8
Market value of stocks and bonds (Ex. 67—Drew)	**$452,363,804.00**							
BASIS.	MINNESOTA PROPORTION							
1—Gross Revenue, 37.25%	$168,505,517.00	$20,018,455.00	$112,426,881.00	$17,339,218.00	$18,720,963.00	$37,357,673.00	$131,147,844.00	$20,894,6
Annual return	4.854%	4.491%	5.871%	0.760%	2.932%	2.76%	5.45%	4.3
2—Operating Expenses, 32.67%	$147,787,255.00	$17,557,126.00	$98,603,657.00	$15,207,308.00	$16,419,164.00	$32,764,434.00	$115,022,821.00	$18,325,6
Annual return	5.535%	5.120%	6.694%	0.867%	3.344%	3.14%	6.21%	4.9
3—Track Mileage, 32.52%	$147,108,709.00	$17,476,515.00	$98,150,931.00	$15,137,486.00	$16,343,777.00	$32,614,001.00	$114,494,708.00	$18,241,4
Annual return	5.561%	5.144%	6.725%	0.871%	3.359%	3.16%	6.24%	4.9

Note.—If the Commodity Rates complained of had been in effect, the Intra-State net freight revenue would
reducing the rates of return thereon correspondingly. (P. 271, Vol. 1, N. P.)

RTHERN RAILWAY COMPANY

MINNESOTA RATE CASE

verage Market Value of Stocks and Bonds, and Annual Return thereon on Various Bases compared with aster's Findings on Gross Revenue Basis.

Four Classes of Business in Minnesota and Annual Return.

			Operating Expense Basis.					
r	INTRA Total 22.17%	INTER Total 77.83%	INTRA Freight 12.4%	INTER Freight 56.5%	INTRA Passenger 16.6%	INTER Passenger 14.5%	INTRA Total 29.00%	INTER Total 71.00%
.00	$30,685,833.00	$107,739,458.00	$17,164,738.00	$78,210,290.00	$22,978,596.00	$20,071,667.00	$40,143,334.00	$98,281,957.00
.23 0%	1,030,802.18 3.36%	7,149,222.93 6.64%	898,997.81 5.237%	6,600,233.70 8.439%	131,804.37 0.574%	548,989.23 2.735%	1,030,802.18 2.57%	7,149,222.93 7.27%
8.00 2%	$37,750,576.00 2.73%	$132,527,171.00 5.39%	$21,114,441.00 4.257%	$96,206,927.00 6.860%	$28,266,106.00 0.466%	$24,690,273.00 2.224%	$49,380,547.00 2.09%	$120,897,200.00 5.91%
0.00 9%	$33,109,029.00 3.11%	$116,232,554.00 6.15%	$18,518,356.00 4.855%	$84,377,994.00 7.822%	$24,790,703.00 0.532%	$21,654,530.00 2.535%	$43,309,059.00 2.38%	$106,032,524.00 6.74%
1.00 4%	$32,957,013.00 3.13%	$115,698,888.00 6.18%	$18,433,332.00 4.877%	$83,990,584.00 7.858%	$24,676,879.00 0.534%	$21,555,106.00 2.547%	$43,110,211.00 2.39%	$105,545,690.00 6.77%
3.00 2%	$37,357,673.00 2.76%	$131,147,844.00 5.45%	$20,894,684.00 4.303%	$95,205,617.00 6.933%	$27,971,916.00 0.471%	$24,433,300.00 2.247%	$48,866,600.00 2.11%	$119,638,917.00 5.98%
4.00 4%	$32,764,434.00 3.14%	$115,022,821.00 6.21%	$18,325,620.00 4.906%	$83,499,799.00 7.904%	$24,532,684.00 0.537%	$21,429,152.00 2.562%	$42,858,304.00 2.41%	$104,928,951.00 6.81%
7.00 9%	$32,614,001.00 3.16%	$114,494,708.00 6.24%	$18,241,480.00 4.928%	$83,116,420.00 7.941%	$24,420,046.00 0.540%	$21,330,763.00 2.574%	$42,661,526.00 2.42%	$104,447,183.00 6.85%

d been in effect, the Intra-State net freight revenue would have been reduced by at least $87,261.43,
(P. 271, Vol. 1, N. P.)

"the strongest kind of evidence of the fair value of the property" (Report, Minnesota Commission 1907). Each of the further steps necessary to prove the issues raised, has been taken in harmony with established principles of law and under the guidance of decided cases and it is respectfully submitted that it has been clearly shown that the rates complained of are so low as to constitute a taking of the property of these companies within the meaning of the Constitutional provisions invoked in these cases. For these reasons, the decrees below should be affirmed.

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WILLIAM D. MITCHELL,
Counsel for Appellees.

DARK PAGE BLEED THRU

CASES CITED.

A

Adams Express Co. v. Ohio, 165 U. S. 194, p. 110.
Adams Express Co. v. Ohio, 166 U. S. 185, p. 334.
Allen, St. Louis I. M. & S. Ry. Co. v., 187 Fed. 290, p. 401-453.
Allen, St. Louis & Southwestern Ry. Co. v., 187 Fed. 290, p. 401-453.
Ames, Smyth v., 169 U. S. 466, p. 48-108-126-160-398-409.
Ames v. Union Pacific, (C. C.) 64 Fed. 165, p. 80-160-182-397-409-690-848.
Arkansas Railroad Rates, In re, 163 Fed. 141; s. c., 187 Fed. 290, p. 14-399-446-690.
Atlantic Coast Line, Prentis et al. v., 211 U. S. 210, p. 30.
A. T. & S. F. Ry. Co. v. Sullivan, 173 Fed. 456, p. 111-160.

B

Backus, Cleveland, etc., Ry. Co. v., 154 U. S. 439, p. 334.
Backus, P. C. & St. L. Ry. v., 154 U. S. 421, p. 110-154.
Bartine, Southern Pacific Co v., 170 Fed. 725, p. 160.
Beckwith, Minneapolis & St. Louis Ry. Co. v., 129 U. S. 26, p. 108.
Board of Commissioners of North Carolina, Mathews v., 106 Fed. 7, p. 127.
Boom Co. v. Patterson, 98 U. S. 403, p. 120-177.
Brymer v. Butler Water Co., 179 Pa. 331, 36 Atl. Rep. 249, p. 117-850.
Buell v. C. M. & St. P., Vol. 1 Wis. R. R. Comm. 508, p. 606.
Butler Water Co., Brymer v., 179 Pa. 331, 36 Atl. Rep. 249, p. 117-850.

C

Charlotte & Columbia R. R. Co. v. Gibbes, 142 U. S. 386, p. 108-110.

Chicago, Chicago, Burlington & Quincy R. R. Co. v., 166 U. S. 226, p. 119-177.
Chicago, Burlington & Quincy R. R. Co. v. Chicago, 166 U. S. 226, p. 119-177.
Chicago Great Western Ry. Co., I. C. C. v., 209 U. S. 108, p. 109-760.
C. M. & St. P., Buell v., Vol. 1 Wis. R. R. Comm. 508, p. 606.
Chicago, Milwaukee & St. Paul Ry. Co. v. Minnesota, 134 U. S. 418, p. 109.
Chicago, Milwaukee & St. Paul Ry. Co. v. Smith, 110 Fed. 473.
Chicago, Milwaukee & St. Paul Ry. Co. v. Tompkins, (C C.) 176 U. S. 167, p. 80-398-442-690-888.
Chicago Traction Co., Raymond v., 207 U. S. 20, p. 111.
Cincinnati Whitewater Canal Co., Goodwin v., 18 Ohio 82, p. 180.
City of Knoxville v. Knoxville Water Co., 212 U. S. 1, p. 122-127-160.
City of New York, Consolidated Gas Co. v., 157 Fed. 849, p. 122-127-160.
City of San Francisco, Spring Valley Waterworks v., 124 Fed. 574, p. 160.
City of St. Paul v. St. Paul & Sioux City Ry. Co., 23 Minn. 469, p. 116.
City of Waterville, Kennebec Water District v., 97 Maine 185, 60 L. R. A. 856, p. 160.
Cleveland, etc. Ry. Co. v. Backus, 154 U. S. 439, p. 334.
Consolidated Gas Co. v. City of New York, 157 Fed. 849, p. 122-127-160.
Consolidated Gas Co., Wilcox v., 212 U. S. 19, p. 49-117-122-127-160-180-763-846.
Consolidated Gas Co., Wilcox v., (C. C.) 151 Fed. 849.
Cotting v. Kansas City Stock Yards Co., 82 Fed. 850, p. 160.
Cotting v. Kansas City Stock Yards Co., 183 U. S. 79, p. 161.

D

Dorlan v. East B. & W. R. R., 46 Penn. St. 520, p. 120.

E

East B. & W. R. R., Dorlan v., 46 Penn. St. 520, p. 120.
Ellis, Gulf, Colorado & Santa Fe Ry. Co. v., 165 U. S. 150, p. 108.
Ex Parte Young, 209 U. S. 123, p. 28.

F

Farmers' Loan & Trust Co., Reagan v., 154 U. S. 362, p. 108-109-182.
First Div. St. Paul & Pac. R. Co. v. Parcher, 14 Minn. 224, p. 116-733.

G

Georgia R. R. & Banking Co., Wright v., 216 U. S. 420, p. 112-129.
Gibbes, Charlotte & Columbia R. R. Co. v., 142 U. S. 386, p. 108-110.
Goodwin v. Cincinnati Whitewater Canal Co., 18 Ohio 82, p. 180.
Great Falls Mnfg. Co., Worcester v., 41 Maine 159, p. 120.
Gulf, Colorado & Santa Fe Ry. Co. v. Ellis, 165 U. S. 150, p. 108.

H

Hadley, St. L. & S. F. Railway Co. v., (C. C.) 168 Fed. 317, p. 14-400-448-690.
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